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PRELIMINARY SITE INVESTIGATION PROPOSED INDUSTRIAL PARK DEVELOPMENT SHELL CHEMICAL PLANT PROPERTY LOS ANGELES, CALIFORNIA

SFUND RECORDS CTR 88041007

CABOT, CABOT & FORBES
C.C.&F. WESTERN DEVELOPMENT CO., INC.
September 22, 1972

Ken O'BRIEN

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PRELIMINARY SITE INVESTIGATION
PROPOSED INDUSTRIAL PARK DEVELOPMENT
SHELL CHEMICAL PLANT PROPERTY
LOS ANGELES, CALIFORNIA
for

CABOT, CABOT & FORBES
C.C.&F. WESTERN DEVELOPMENT CO., INC.
September 22, 1972

I INTRODUCTION

A. Purpose

The purpose of this report is to present the findings of a preliminary study of the surface and subsurface conditions of the Shell Chemical Plant property located in the southern part of Los Angeles, California.

B. Location

The Shell Chemical Plant property (approximately 277 acres) is located a short distance to the southwest of the intersection of the San Diego and Harbor Freeways. Refer to Plate No's. 1 and 2. The property is separated into two parts. One portion (approximately 195 acres) is bordered on the north by 190th Street, on the east by Vermont Avenue, on the south by the extension of Del Amo Boulevard, and on the west by an industrial area whose frontage is on Normandie Avenue. The second portion (approximately 82 acres) is bordered on the north by Knox Street, on the east by Hamilton Street, on the south by Del Amo Boulevard, and on the west by Vermont Avenue.

C. Authorization

This preliminary site investigation was authorized by Cabot, Cabot & Forbes, C.C.&F. Western Development Co., Inc., Los Angeles, California. The objective of this investigation is to determine the suitability of the Shell Chemical Plant property for development into an industrial park.

D. Scope

This report presents subsurface information including geology, seismology, soils, results of laboratory tests on typical subsurface materials, location of sumps and contaminated areas, description of existing structure foundations, and description of existing utilities (sewers, storm drains, water mains, gas mains, etc.). This report also presents information on surface conditions such as existing streets, railroads, buildings, drainage, utilities, etc.

The findings of the preliminary site investigation are presented to indicate the nature of the problems that will be encountered in developing the Shell Chemical Plant property into an industrial park. The report recommends which existing facilities and utilities should be retained. A series of industrial park layouts were developed and the most promising preliminary plan at this time is included. Refer to Plate No. 3.*

^{*}In Folio

II ENGINEERING GEOLOGY

A. Geology and Physiography

The Shell Chemical Plant site is located physiographically in the Angeles Section of the Pacific Border Province.

This particular area is known as the Torrance Plain and is of marine origin.

It is understood that the site prior to construction of the Chemical Plant in 1941 was used for agricultural purposes.

Geologically, the site is underlain by Pliocene and older rocks. Refer to Plate No. 4. These are overlain by the San Pedro formation and unnamed Upper Pleistocene deposits. Above these, occur the Palos Verdes Sand or equivalent of Upper Pleistocene age. The highly fossiliferous sand encountered in Auger Boring No's. 5, 8 and 15 drilled during the subsurface investigation, and the thin coquina beds encountered in Boring No's. 5 and 15 probably represent the basal portion of the Palos Verdes sand zone. The reddish brown deposits encountered in Auger Boring No's. 8, 12, 15, 17, 19, 21 and 22 represent terrace cover of probable flood plain origin or may be the upper few feet of the Palos Verdes sand modified by weathering. The dark brown to black organic near surface material probably represents remains from the original agricultural usage.

B. Faulting

The southernmost trace (exact location uncertain) of the Avalon-Compton fault is located approximately 3 miles northeast of the area of interest on the north flank of Dominguez Hill and trends in a northwest direction.

A short, inferred fault is mapped 3-1/2 miles southeast of the site, trending northwest towards the area of interest. There is no reported evidence of movement along either of these faults during Recent time (±18,000 years). The northwest-southeast trending Palos Verdes fault zone is located approximately 5 miles to the southwest of the site. This fault is considered active.

The thin marker beds (shell and Coquina) encountered in Boring No's. 5, 8 and 15 indicate that there has been no displacement at the site due to faulting. No faults are mapped or were observed in the immediate vicinity of the Shell Chemical Plant property.

C. Seismology

A study of epicenter events for the general area (recorded since 1934) reveals that the largest earthquake event in the general area occurred in 1941 and had a magnitude ≥ 5 (Richter scale) but less than 6 (the damaging Long Beach earthquake of 1933 had a magnitude of 6.3). The epicenter for

An epicenter map is not included in this report because the latest data available is being compiled for publication by the California Institute of Technology. The information has not been published and is proprietory until that time.

this earthquake appeared to be located in the Palos Verdes fault zone, approximately 5 miles south of the site. Numerous earthquake events of a magnitude of 4 or less have been recorded along this fault zone and in the near vicinity. The latest available information is for 1970 and is considered preliminary. This shows that approximately 17 events of magnitudes of 4 or less occurred along the Palos Verdes fault zone and in the general area of interest (a circle with a 5-mile radius centering on the site) during 1970. The average number of earthquake events over the past 37 years is approximately five per year. With the exception of 1941, all of these events had a magnitude of 4 or less. Most of the events were probably so low in magnitude that they were not noticed by the general public and could only be detected by instrumentation.

It is not possible to predict earthquakes at this point in time. However, the general area (5-mile-radius circle) is seismically active, primarily to the southwest. It is likely that a structure in this area will be subject to the effects of several shocks per year with a magnitude of 4 or less, the majority of which will probably not even be noticed. Some time during the lifetime of structures on this property, they will probably be subjected to the effects of a shock of the magnitude of 5 or 6. A microregionalization map of the Los Angeles Basin shows that a shock with a probable maximum intensity of VIII (Modified Mercalli scale) is possible within a 100-year period in the general area of the proposed site.

As there is no evidence of faulting in the immediate vicinity of the site, the probability of surface rupture due to earthquake activity is remote.

Ground shaking intensity depends on the distance from the earthquake source (epicenter, fault), i.e. the greater the distance, the less the intensity but the longer the duration; however, soil conditions can influence the intensity.

soil conditions at this site are generally favorable in that the material encountered consists of a relatively homogeneous and dense lithologic sequence. A general classification of the materials encountered are: sandy clay, clayey sand, sand, and silty/clayey sand. The relative blow count, by a standard penetration test (i.e. driving a 1-1/2-inch I.D. split spoon sampler with a 140-pound hammer falling 30 inches) ranges from 8 to 39 blows per foot of penetration.

Two of the 38 borings drilled at the site were to depths of 50 feet and one was drilled to 60 feet. Two of the three deep borings encountered an extremely well cemented shell formation (Coquina) at 45 and 49 feet (Boring No's. 5 and 15). Refer to Plate No's. 35 and 45.

D. Subsidence

In several areas of the Los Angeles basin, ground subsidence has been occurring due to pressure relief from the withdrawal of fluids from deep oil, gas, and water zones.

Mr. L. R. Donkle, Staff Engineer, Shell Chemical Company, who has been assigned to the plant for 29 years, reports that no subsidence has been noted in the plant area during his tenure.

E. Partial Reference - Engineering Geology

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Barosh, J. P.; Use of Seismic Intensity Data to Predict the Effects of Earthquakes and Underground Nuclear Explosions in Various Geologic Settings, USGS Bulletin 1279, 1969.

California Department of Water Resources; Crustal Strain and Fault Movement Investigation, Bulletin 116-2, 1964.

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Hileman, J.; Southern California Network Epicenter Maps (unpublished), California Institute of Technology, 1972.

Poland, J. F., Garrett, A. A. and Simnott, A.; Geology, Hydrology, and Chemical Character of Ground Waters in the Torrance-Santa Monica Area, California, USGS Water Supply Paper 1461, 1959.

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III SOIL INVESTIGATION

A. Field Investigation

The subsurface field investigation consisted of drilling auger borings and excavating backhoe trenches within the Shell Chemical Plant property at the locations shown on Plate No. 5.* Western Laboratories arranged for the bucket auger drilling and backhoe trench excavations. Twenty-two auger borings were drilled with an 18-inch bucket auger. Nineteen borings were drilled to a depth of 25 feet, two to a depth of 50 feet, and one to a depth of 60 feet. Contaminated Area No's. 1 and 2 discovered by Boring No. 2 were investigated for areal extent and depth by drilling sixteen 24-inch bucket auger borings and excavating 34 backhoe trenches. The oil and chemical Contaminated Area No. 3 discovered by visual reconnaissance was investigated for areal extent and depth by excavation of three backhoe trenches (No's. 23, 26 and 27). Two other backhoe trenches (No's. 24 and 25) were excavated to examine other potential contaminated areas. Refer to Plate No. 5* for the location of the auger borings, backhoe trenches and contaminated areas.

Engineering geologists (one each from Western Laboratories and Ken O'Brien & Associates) supervised the drilling of the auger borings and backhoe trenches, classified the subsurface materials, and prepared a field log for each boring and backhoe trench. The auger boring and backhoe trench logs are included, Plate No's. 31 through 74.

^{*}In Folio

Soil samples were recovered from the auger borings utilizing a 2.43-inch I.D. split spoon sampler that contained either 1-inch rings and/or 5- or 6-inch sleeves. Standard penetration tests were made with a 1-1/2-inch I.D. split spoon sampler driven by a 140-pound hammer falling 30 inches. Disturbed samples were also recovered at various intervals for moisture content determination and grading analysis.

B. Laboratory Testing

Representative samples of subsurface materials recovered from the soil borings were subjected to the following laboratory tests that were performed by Western Laboratories.

In situ Moisture Content In situ Density Gradation/Hydrometer Atterberg Limits Unconfined Compression Consolidation and Swell Swell Tests Direct Shear



The in situ moisture content and density determinations are recorded on the boring logs. The results of the remainder of the tests are presented on Plate No's. 9 through 30.

C. Subsurface Conditions

The materials encountered in the soil borings consisted of a heterogeneous mixture of sandy clay, clayey sand, silty sand, sand, sandy silt and silty clay. This heterogeneous mixture extends to approximately ±40 feet in depth. In Boring No's. 5, 8 and 15, a thin sand section containing numerous shell fragments

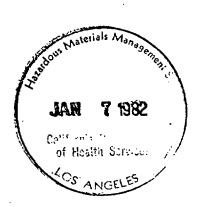
was encountered at 42, 39 and 44 feet, respectively. A well cemented shell bed (Coquina) was encountered at 45 and 49 feet in Boring No's. 5 and 15, respectively. The typical subsurface soil conditions for the Shell Chemical Plant property, except for the contaminated areas, are presented on Plate No. 6.

As previously mentioned, three contaminated areas were found during the subsurface investigation. The areal extent of the contaminated areas is shown on Plate No. 7. A profile of the vertical extent of contamination in Area No's. 1 and 2 are shown on Plate No. 8. The contamination consists of oil-saturated native materials in Area No's. 1 and 2. In Area No. 3, the oil saturation extends to 5-foot depth and below this depth the native materials have been chemically contaminated to approximately 10 feet. The contamination in Area No. 2 also includes debris (broken concrete, wood, old tires, etc.) that was dumped into the sumps.

D. Properties of the Subsurface Materials

The properties of the subsurface materials encountered at the Shell Chemical Plant property based on laboratory tests are summarized in the following tabulation:

| Property Property | Range | | | Average |
|--|-------|----------|-------------|-------------|
| In situ Moisture Content - % dry weight | 5 | to | 37 | 16 |
| In situ Dry Density - lbs/ft3 | 79 | to | 134 | 112 |
| Liquid Limit (sandy clay @ 3.5 to 4.5 foot depth) | 32 | to | 43 | 37 |
| Plasticity Index (sand clay @ 3.5 to 4.5 foot depth) | | to | 23 | . 18 |
| Unconfined Compressive Strength (kips/ft ²) | 3.1 | to | 12.4 | 7.3 |
| Standard Penetration - blow/ft | 8 | to | 39 | 20 |
| Expansion - percent | | to | 0.95, | 0.55 |
| Direct Shear Test Results Cohesion - lbs/ft2 Angle of friction (Ø) - degrees | | to to | 1,450 32 | 1,195 27 |



IV SITE EVALUATION AND ANALYSIS

Site Description

CS ANGELES The Shell Chemical Plant property (approximately 277 acres) as previously described is separated into two parts by Vermont Avenue. The portion west of Vermont Avenue (approximately 195 acres) is bordered on the north by 190th Street, on the south by the dedicated right-of-way for Del Amo Boulevard, and on the west by a Los Angeles County industrial area whose frontage is on Normandie Avenue. The portion east of Vermont Avenue (approximately 82 acres) is bordered on the north by Knox Street, on the east by Hamilton Street, and on the south by the dedicated right-of-way for Del Amo Boulevard.

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The property is very flat; the total relief is 25 feet sloping to the east (approximately 0.7 percent slope). elevation of the site is 20 to 45 feet above mean sea level.

The Shell Chemical Plant occupies the property consisting of an Elastomer Technical Center; and Butadiene, Styrene and Polymer Units. The existing structures and facilities consist of office buildings, warehouses, shops, compressor stations, pump stations, tanks, stacks, towers, exchangers, vessels, columns, coolers, substations, etc. The existing plant is supported by an extensive system of underground utilities consisting of water distribution systems (domestic, utility and fire), sewer collection system (sanitary and process), storm drains, steam and gas distribution systems.

B. Foundation Conditions

The soil investigation revealed that the subsurface materials are competent except for three contaminated areas. The subsurface materials consist of a heterogeneous mixture of sandy clay, clayey sand, silty sand, sandy silt and silty clay to a depth of approximately 40 feet. Below that depth, the subsurface materials consist of sand and shell fragments including a well cemented shell bed (Coquina) to approximately 57 feet.

Because of the competent nature of the subsurface materials, spread footing foundations can be utilized to support structures that may be constructed at this proposed industrial park site. Based on strength data determined by laboratory tests, the following are allowable soil bearing values for the near subsurface materials:

Continuous Footings - 4,000 pounds per square foot
Square Footings - 5,000 pounds per square foot
The depth of embedment of footings must be equal to or greater
than the width of the footing. The above bearing values are
for maximum embedment of 5 feet and includes normal live load
plus dead load and the weight of the footing.

Settlement analyses were made in order to obtain an order of magnitude of settlement under foundation loads. For a 5-foot square footing embedded 5 feet with a load of 5,000 pounds per square foot, the settlement will range from 2 to

5 inches. The maximum settlement assumes the subsurface soil conditions reflect the weakest material encountered. The 2-inch settlement assumes the subsurface conditions reflect the strongest material encountered. For smaller size footings, the settlement will be considerably less. The 5-inch settlement is a theoretical value that would never actually be attained because allowable load would never be imposed on the foundation soils 100 percent of the time.

Pilings or caissons would only be required to support extremely heavy structures. For the normal light to medium type industrial structures, spread footings can be utilized without problem.

Each foundation design for industrial structures must be individually analyzed. The foregoing bearing values and estimated amount of settlement are given for informational purposes only and should not be used carte blanche.

C. Contaminated Areas

Three contaminated areas were disclosed during the subsurface investigation. As previously mentioned, the areal extent of the contaminated areas is shown on Plate No. 7 and the profile of the vertical extent of Contaminated Area No's. 1 and 2 is given on Plate No. 8.

In Area No's. 1 and 2, the contamination consists of oil-saturated materials that are soft and unstable. In addition, Area No. 2 contains debris consisting of concrete rubble, organic material, steel, clay pipe, etc. The depth of contamination

in Area No. 1 is 5 feet and in Area No. 2, is 25 feet. In Area No. 3, the oil saturation extends to 5-foot depth and below this depth, the native materials have been chemically contaminated to approximately 10 feet.

Area No. 1 is approximately 670 feet long and 110 feet wide (1.7 acres); Area No. 2 is approximately 390 feet long and varies in width from 60 to 150 feet (0.6 acre); and Area No. 3 is approximately 250 feet long and averages 170 feet wide (1.0 acre). The contaminated areas are not suitable as building sites and in their present condition could be used only for parking areas or storage sites. It is feasible to remove and replace the materials in Area No. 1; the feasibility of removing and replacing materials in Area No. 2 is marginal; and it is not feasible to remove and replace the materials in Area No. 3.

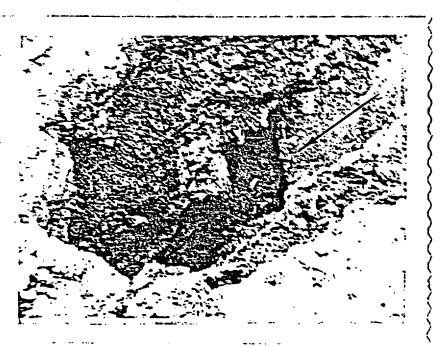
The amount of contaminated material in Area No. 1 is approximately 15,000 cubic yards. The cost to remove this material is estimated at \$2.50/cubic yard plus the charge to haul the material to a disposal site. Area No. 2 contains approxi-/mately 24,000 cubic yards of contaminated material. The cost to excavate this material will probably amount to \$5.00/cubic yard plus the cost of hauling to a disposal site. Area No. 3 contains approximately 16,000 cubic yards of contaminated material. The cost of excavating this material will be approximately \$4.00/cubic yard plus the cost of transporting the material to a disposal site.

Photograph No's. 1 and 2 (following page) shows the oil-contaminated material and the debris found in Contaminated Area No. 2.



PHOTOGRAPH NO. 1
Oil-Contaminated Material





PHOTOGRAPH NO. 2 Concrete Slab (arrow) and Miscellaneous Debris

D. Demolition

The Shell Chemical Plant property site contains a great number of structures that are aboveground and the site also includes many underground utilities. The aboveground structures and underground utilities were designed to support a petrochemical operation. Almost all of the buildings and utilities cannot be utilized to support a modern industrial park. Those few permanent buildings that could possibly be usable will require a great deal of renovation and it is most probable that the existing location of these facilities would compromise the planning of an efficient industrial park layout. The existing in-plant road and streets are substandard and do not comply with the requirements of the City of Los Angeles. The railroad tracks with n the in-plant area are for the most part improperly located to support a modern industrial park.

All aboveground surface structures should be removed. All near surface foundations (depths of 2 to 3 feet or less) should also be removed. Those foundations which are at a depth greater than 3 feet can remain in place and should be identified so that future industrial park pla-ning and industrial building construction can take into account whether or not they will have to be removed.

All existing underground utility lines that cross or are within the right-of-way of future dedicated streets will have to be removed. All other utility lines can remain in place bu

should be purged. These utility lines may have to be removed when industrial building construction and development of individual lots occurs.

A majority of the in-plant railroad track will have to be removed and reconstructed to support the industrial park layout. The railroad track and ties are salvagable. The ballast is not salvagable but can be utilized in the construction of structural sections for streets and parking areas.

The cost of removing railroad track is approximately \$2.00/linear foot. The cost of reconstructing railroad track (utilizing used track and ties with new ballast) is approximately \$10.00/linear foot.

E. Grading

The Shell Chemical Plant property is relatively flat.

The total relief is 25 feet; the terrain sloping due east from elevation 45 feet at the west property line to elevation 20 feet at Hamilton Street (approximately 0.7 percent slope). Within the plant site, there are areas that have been raised 3 to 4 feet above the existing grade to provide pads for petrochemical structures.

There should be no problem in rough grading the plant site area to the plan of the future industrial park except for existing utilities and foundations that may be encountered. The surface and subsurface materials can be excavated with conventional

earthmoving equipment. It is not anticipated that a great deal of grading will be required to prepare the site for industrial subdivision development.

F. Streets

The existing road and street system of the Shell Chemical Plant cannot be retained and utilized in the proposed industrial park layout. Further, the in-plant road and streets are substandard and do not comply with the City of Los Angeles Bureau of Engineering requirements.

The Preliminary Industrial Park Layout (Plate No. 3) indicates a tentative layout of streets for the proposed industrial park. The Bureau of Engineering has indicated that the total right-of-way width of 64 feet will have to be provided and dedicated. These collector streets will have a paved width of 44 feet with curbs and gutters and a 10-foot parkway on each side within which will be constructed a 5-foot sidewalk.

The Preliminary Industrial Park Layout plan indicates the extension of Knox Street from the west property line to Vermont Avenue and widening of Knox Street from Vermont Avenue to Hamilton Street. The preliminary plan also indicates the extension of Francisco Street from the west property line easterly to Hamilton Street. Whereas Knox Street can be continuous from Normandie Avenue to Hamilton Street, there are problems in continuing Francisco Street. At the present time, Francisco Street is located within Los Angeles County and there is a

(cul-de-sac at the east end. Unfortunately, an industrial building projects approximately 2 feet northerly of the south curb
line of Francisco Street at the east end, and in order to connect
Francisco Street, a slight curvature at this location would be
required. This may or may not be possible.

The Bureau of Engineering has indicated the following requirements with regard to exterior streets.

An additional 25-foot right-of-way will be required for the proposed Del Amo Boulevard that adjoins the south boundary of the Shell Chemical Plant property and that construction of one-half of a major highway will be required. One-half of the major highway includes a 40-foot paved width, curb and gutter, and a 10-foot parkway that is fully paved with concrete. This requirement by the Bureau of Engineering will require that the property fence be moved northerly 25 feet and that the rail-road tracks paralleling Del Amo Boulevard will have to be removed and relocated.

Vermont Avenue is a major highway and at the present time, the right-of-way width is 80 feet. The Bureau of Engineering has indicated that a 100-foot width of right-of-way will be required. This means that an additional dedication of 10 feet on each side of Vermont Avenue will be required from Del Amo Boulevard northerly to Knox Street and 10 feet only on the west side of Vermont Street from Knox Street to 190th Street.

The fence line on the east side of Vermont Avenue between Del Amo Boulevard and Knox Street is on the line of the future right-of-way. There is a fence on the west side of Vermont Avenue from Del Amo Boulevard to Knox Street but it is located westerly of the future right-of-way line. At the present time, the portland cement concrete pavement width of Vermont Avenue on the east side of the centerline from Del Amo Boulevard to Knox Street is 15 feet with a 5-foot asphalt concrete shoulder. The pavement width on the west side is 25 feet with a 5-foot shoulder. North of Knox Street to 190th Street, the pavement width of Vermont Avenue on the west side of the centerline is 25 feet with a 13-foot-wide asphalt concrete shoulder. The fence line on the west side of Vermont Avenue from Knox Street to 190th Street is located along the future right-of-way line.

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The Bureau of Engineering has indicated that 190th Street will be constructed to a major highway with a 100-foot right-of-way width. Between the north property line of the Shell Chemical Plant and the new south right-of-way line for 190th Street is a strip of land 50 feet wide which is owned by the City of Los Angeles and contains an open drainage ditch. The Bureau of Engineering has indicated that the City of Los Angeles contemplates the widening of 190th Street at an early date and included therein will be a storm drain constructed by the Los Angeles County Flood Control District. The existing drainage ditch will then be covered and the land sold to the

adjoining property owner. This strip which is 50 feet wide, as previously mentioned, is approximately 1,900 feet long and contains 2.2 acres.

G. Storm Drainage

The development of an industrial park on the Shell Chemical Plant property will require the design and construction of a new storm drainage system. The existing storm drainage system cannot be retained to serve the needs of the proposed industrial development and further will not conform to the requirements of the City of Los Angeles and Los Angeles County Flood Control District.

Fortunately, there are four possible storm drainage outlets for the Shell Chemical Plant property. They are:

- (1) The storm drain in 190th Street which drains to the east.
- (2) The storm drain in Knox Street that drains easterly of Hamilton Avenue to the Harbor Freeway outlet.
- (3) A storm drain located in Kenwood Avenue (a north-south street) located one block south of Del Amo Boulevard, approximately in line with the west boundary of the property.
- (4) A Los Angeles County Flood Control channel that is located approximately 900 feet south of Del Amo Boulevard.

 Access to the Los Angeles County Flood Control channel can be attained via Hamilton Street or Vermont Avenue.

The capacity of the 190th Street drain, the Knox Street drain, and the Kenwood Avenue drain are limited. The Los Angeles County Flood Control District channel has virtually unlimited capacity. The Bureau of Engineering, City of Los Angeles, recommends that in development of the storm drainage system for the proposed industrial development that the subdivision be divided into four drainage zones. These four zones would drain into the aforementioned existing storm drainage systems.

H. Water

Water for the proposed industrial development on the Shell Chemical Plant property will have to be obtained from the Los Angeles Department of Water and Power (DWP). DWP was contacted to ascertain the requirements they would impose for supplying water to the proposed industrial development.

At the present time, there is an existing DWP water main serving the Shell Chemical Plant. The main is located in the proposed right-of-way to be dedicated for Knox Street. A 24-inch main extends from Normandie Avenue to Vermont Avenue; easterly of Vermont Avenue, the main is reduced in size to 20 inches and extends to the Metropolitan Water District line. DWP indicates that this main has served its useful life (31 years) and would be of no value in serving the proposed industrial development. DWP indicates that a complete new system would have to be developed for the industrial subdivision. The water supply is available at 190th Street and Normandie Avenue.

off-site improvements would probably have to be extended easterly in 190th Street to Vermont Avenue and southerly in Normandie Avenue to Del Amo Boulevard, in Knox Street from Normandie Avenue to the west property line and in Francisco Street from Normandie Avenue to the west property line. Onsite improvements would be required along Vermont Avenue from 190th Street to Del Amo Boulevard, along Avenue A, along Avenue B, along Knox Street from the west boundary to Hamilton Street, along Francisco Street from the west property line to Hamilton Street, within the Del Amo Boulevard right-of-way from Normandie Avenue to Hamilton Street, and along the east side of Hamilton Street from Del Amo Boulevard to Knox Street. Refer to Plate No. 3.

Off-site improvements are those which are constructed within a street right-of-way that requires excavation of pavement and replacement thereof. On-site improvements are those which can be constructed prior to paving within the industrial subdivision, and within existing street rights-of-way outside of the pavement area. The water main that would be extended along Vermont Avenue, Del Amo Boulevard, and Hamilton Street would be considered as on-site improvements because they can be constructed within the street rights-of-way without disturbing the pavement.

Preliminary estimates indicate that 12-inch water mains will be required. The cost per foot of off-site improvements is approximately \$31.50/linear foot. The cost for on-site improvements would be approximately \$13.00/linear foot. Fire hydrants will be required within the industrial development and at the present time, the cost of installing 4 by 4 hydrants is \$784.00 each. However, in the near future, the cost of furnishing and installing fire hydrants will be increased 15 percent.

Along the collector streets, fire hydrants can be installed on one side of the street only and spaced 300 to 400 feet apart. Fire hydrants along major highways will have to be placed on both sides of the street at 300- to 400-foot intervals.

OPW indicates that the total cost of the water system (on- and off-site) will have to be borne by the subdivider and this includes cost of the fire hydrants. The water system can be constructed incrementally; however, the terms of payment are cash in advance.

I. Sewers

The existing sanitary sewer system for the Shell Chemical Plant cannot be adapted to support the proposed industrial development. Therefore, local sewer mains will have to be constructed in the collector streets and extended to trunk lines. There is an existing trunk sewer line in Vermont Street that extends from just north of Knox Street, southerly to Del Amo Boulevard, and then easterly in the Del Amo Boulevard

right-of-way to Hamilton Street. There is also a trunk sewer in Normandie Avenue that flows southerly.

The Bureau of Engineering, City of Los Angeles, has indicated that they will designate to which trunk line the sewage collection system for the proposed industrial development will drain. There is adequate capacity in Vermont Avenue and Normandie Avenue to accommodate the sanitary sewage that will be generated in the proposed industrial development.

J. Electricity

The demolition of the Shell Chemical Plant will necessarily include removal of the electrical distribution system. Therefore, an entire new system will be required for the proposed industrial development. The electrical power for the industrial development will be supplied by the Los Angeles Department of Water and Power. There is apparently sufficient power capacity available nearby to support the proposed industrial development. The Preliminary Industrial Park Layout (Plate No. 3) indicates an area reserved for a DPW substation located northerly of the Del Amo Boulevard right-of-way adjoining Normandie Avenue. The electrical distribution system would emanate from this location and extend northerly and easterly.



V SUMMARY AND RECOMMENDATIONS

The following summarizes the pertinent features for the industrial subdivision development of the Shell Chemical Plant property.

A. Site Description

The Shell Chemical Plant is located in the City of Los Angeles, Los Angeles County, California, southwest of the intersection of the San Diego and Harbor Freeways.

The accessibility to the site is good and there are nearby off-ramps from San Diego and Harbor Freeways. Major highways abut the property on the north (190th Street) and on the east (Hamilton Street). Vermont Avenue, a north-south major highway, divides the property into two parts.

The area of the property is approximately 277 acres.

The site is relatively flat, sloping to the east at 0.7 percent grade from elevation 45 feet at the west property line to 20 feet above mean sea level at Hamilton Street.

The subsurface materials are competent; no unusual foundation problems should be encountered except in the three areas that had been used as disposal for oil and chemical materials.



B. Existing Facilities

The existing facilities at the Shell Chemical Plant consist of office buildings, warehouses, vessels, tanks, columns, coalers, exchangers, pump stations, compressor stations, etc.

These facilities will have to be removed prior to industrial development since they were designed to support a petrochemical operation and cannot be effectively integrated into a modern and industrial park.

Underground utilities at the Shell Chemical Plant consist of water distribution, sewage collection, storm drainage, and gas distribution. These utilities will virtually have no retention value for industrial development since they too cannot be effectively integrated into a modern industrial park.

C. Analysis of the Features of Industrial Subdivision Development

- (1) Grading No serious grading problems. Materials can be excavated with conventional earthmoving equipment.
- (2) Storm Drainage Four outlets are available for storm drainage and a carefully engineered design can be achieved with relative ease.
 - (3) Streets City of Los'Angeles, Bureau of Engineering specified that collector streets should be constructed for
 the interior access to the industrial park lots. These collector
 streets can be connected to major highways to the north

(190th Street), east (Hamilton Street), west (Normandie Avenue) and within the development (Vermont Avenue)

- (4) Water Los Angeles Department of Water and Power indicates that an adequate water supply is available for proposed industrial development at 190th Street and Normandie Avenue.
- (5) Sewage Sewage collection facilities can be developed to flow into existing trunk lines located in Del Amo Boulevard and Vermont Avenue.
- (6) Electricity Electric power available from Los Angeles Department of Water and Power within the project boundaries.

D. Recommendations

The development of the Shell Chemical Plant property into an industrial subdivision appears to have only two serious problems. The first problem is the demolition of the existing facilities. The demolition of the aboveground facilities should be accomplished without too much problem. Removal of the underground utilities and facilities (foundations) could be costly and it is recommended that only those underground utilities and facilities be removed that are necessary for the development of the proposed industrial subdivision.

The street requirements imposed by the City of Los Angeles Bureau of Engineering for the proposed industrial subdivision development are not unusual except for one element.

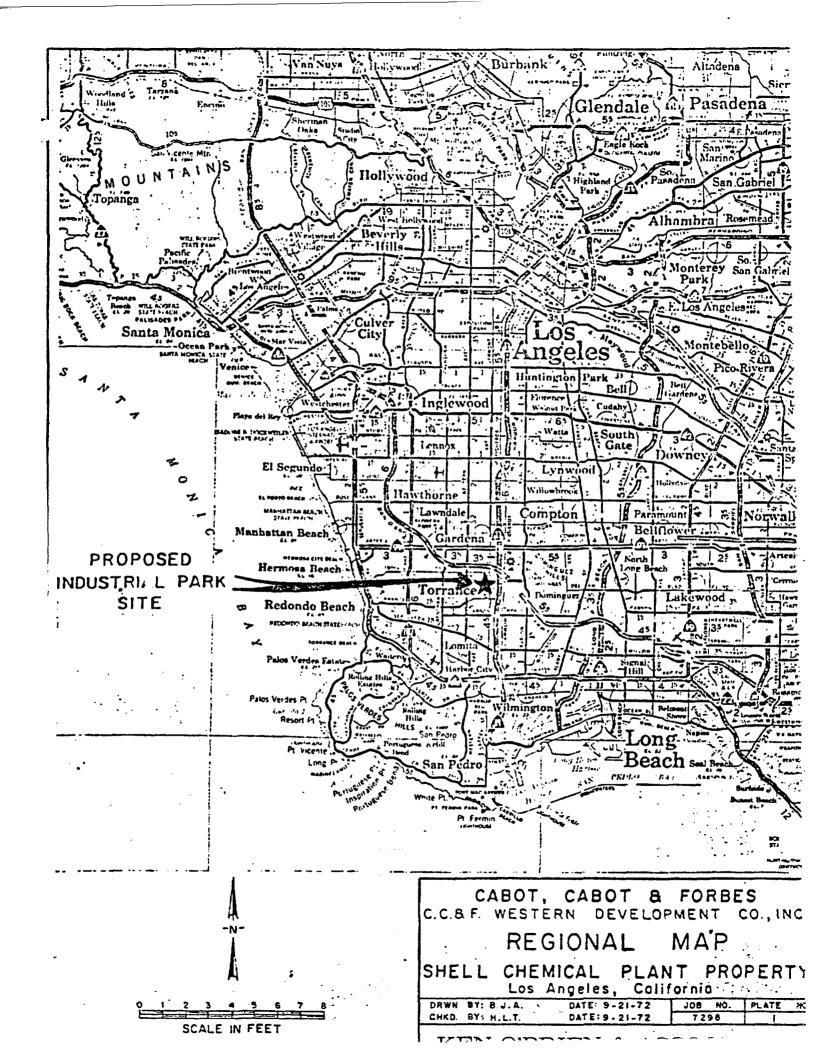
This element is with regard to the dedication of 25 feet of additional right-of-way along the south property line for Del Amo Boulevard and the construction of one-half of the major highway. To meet this requirement would necessitate relocation of the railroad tracks paralleling Del Amo Boulevard.

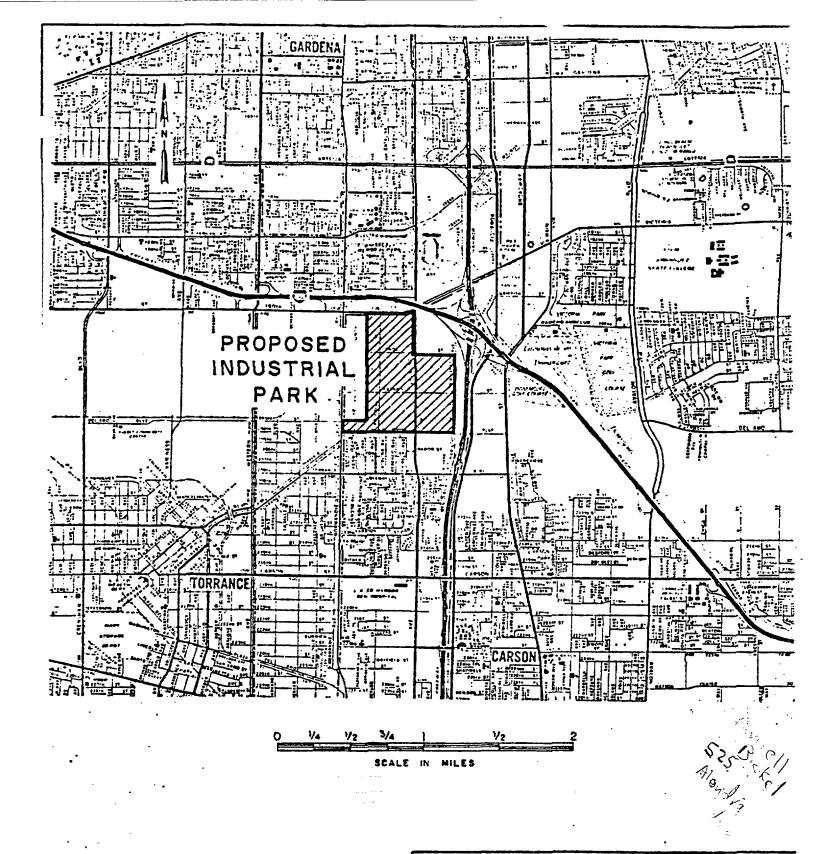
The property south of the Los Angeles Department of Water and POwer right-of-way and north of Del Amo Boulevard west of Vermont Avenue is of limited value in its present condition because of the two contaminated areas (total area, 2.3 acres). One of the contaminated areas could be removed; however, the cost of rehabilitating the other contaminated area would be prohibitive. It appears that the area to the south of the Department of Water and Power right-of-way probably has a use for parking or storage only.

The potential commercial or industrial development along Del Amo Boulevard from Normandie Avenue to Hamilton Street is limited to the north of Del Amo Boulevard since the area to the south is residential.

The connection of Del Amo Boulevard to the extension of 203rd Street will require a right angle turn to the north at Normandie Avenue and a left turn 186 feet north onto 203rd Street. Therefore, the creation of an efficient east-west major highway utilizing Del Amo Boulevard and 203rd Street will be difficult.

It is recommended that the matter of widening Del Amo Boulevard be pursued as follows. Del Amo Boulevard should be designated as a collector street and not as a major highway. This would reduce the right-of-way requirement for Del Amo Boulevard from 100 to 64 feet and only 7 feet of additional right-of-way would be required. Dedicating only 7 feet of right-of-way along the south property line would allow the northerly track of the parallel tracks along Del Amo Boulevard to remain in place. The southerly track would have to be removed and the northerly track extended to cross Vermont Avenue, approximately 15 feet north of the existing crossing.



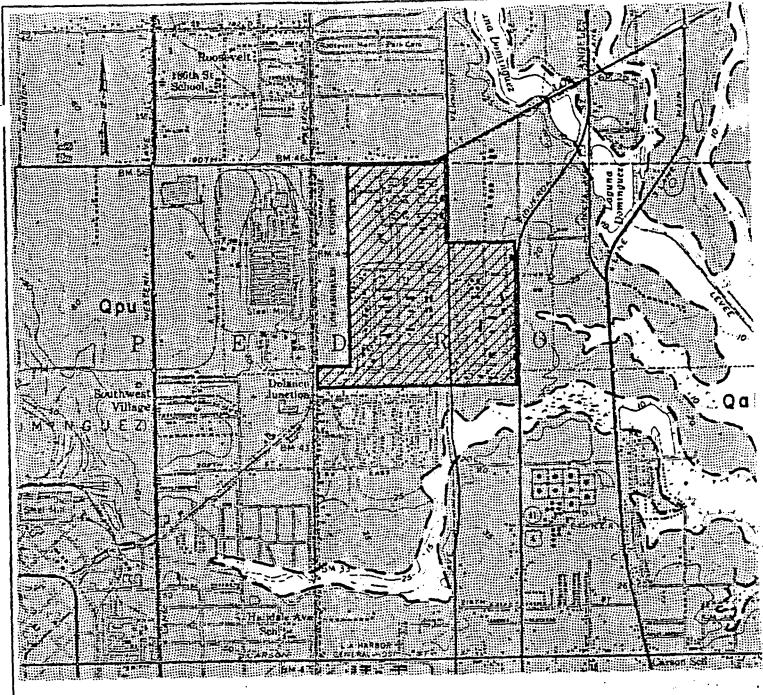


CABOT, CABOT & FORBES C.C.&F. WESTERN DEVELOPMENT CO., INC

LOCATION MAP

SHELL CHEMICAL PLANT PROPERTY
Los Angeles, California

DRWN BY: V.R.W. DATE: 9-14-72 JOB NO. PLATE MO. CHKD. BY: H.L.T. DATE: 9-20-72 7298 2



2000 0 2000 4000 SCALE IN FEET

LEGEND

Qd | ALLUVIAL & COASTAL DEPOSITS (RECENT)

QPU TERRACE COVER OR PALOS VERDES SAND (UPPER PLEISTOCENE)

--- GEOLOGIC CONTACT

PROPOSED INDUSTRIAL PARK



REFERENCES:

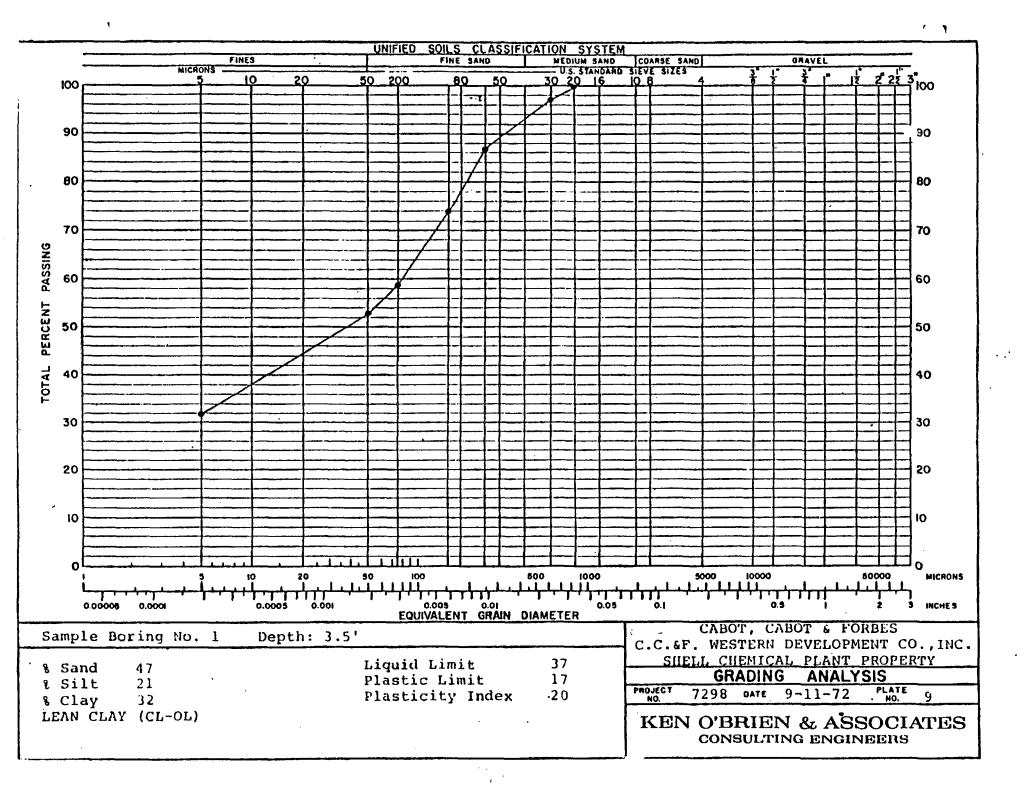
I. U.S.G.S. WATER SUPPLY PAPER 1461

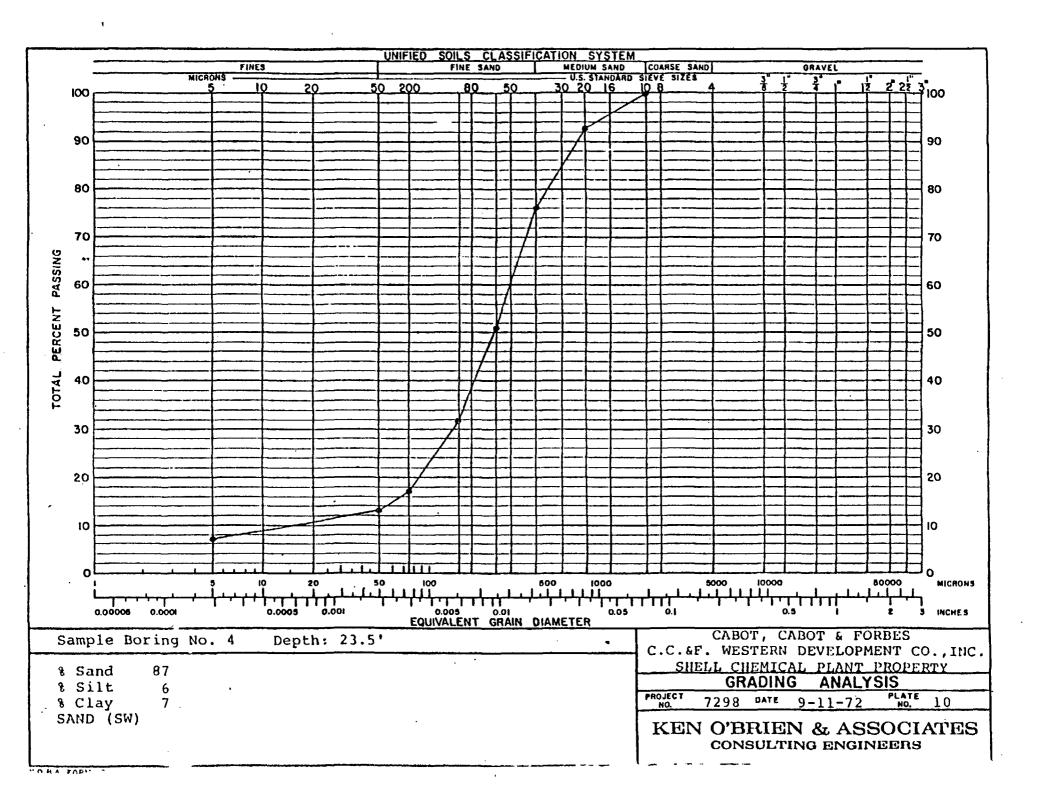
2. TORRANCE QUADRANGLE MAP 7.5 Minute Series (Topographic) CABOT, CABOT & FORBES C.C. & F. WESTERN DEVELOPMENT CO., INC

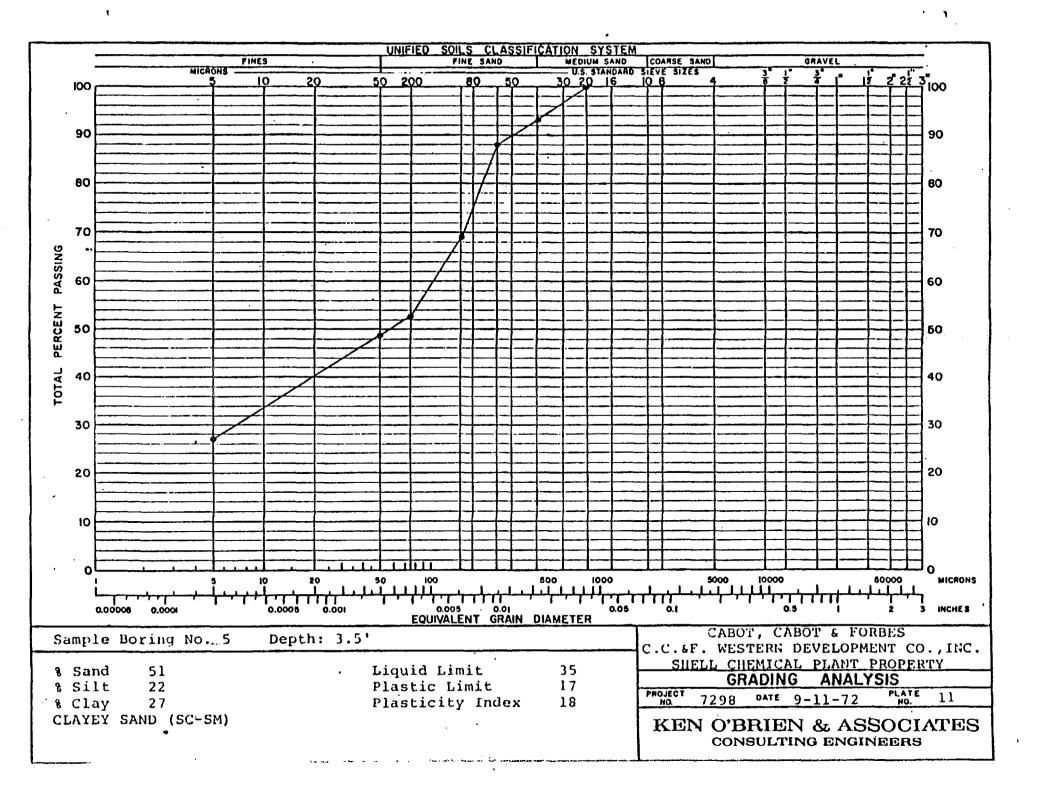
GEOLOGIC MAP

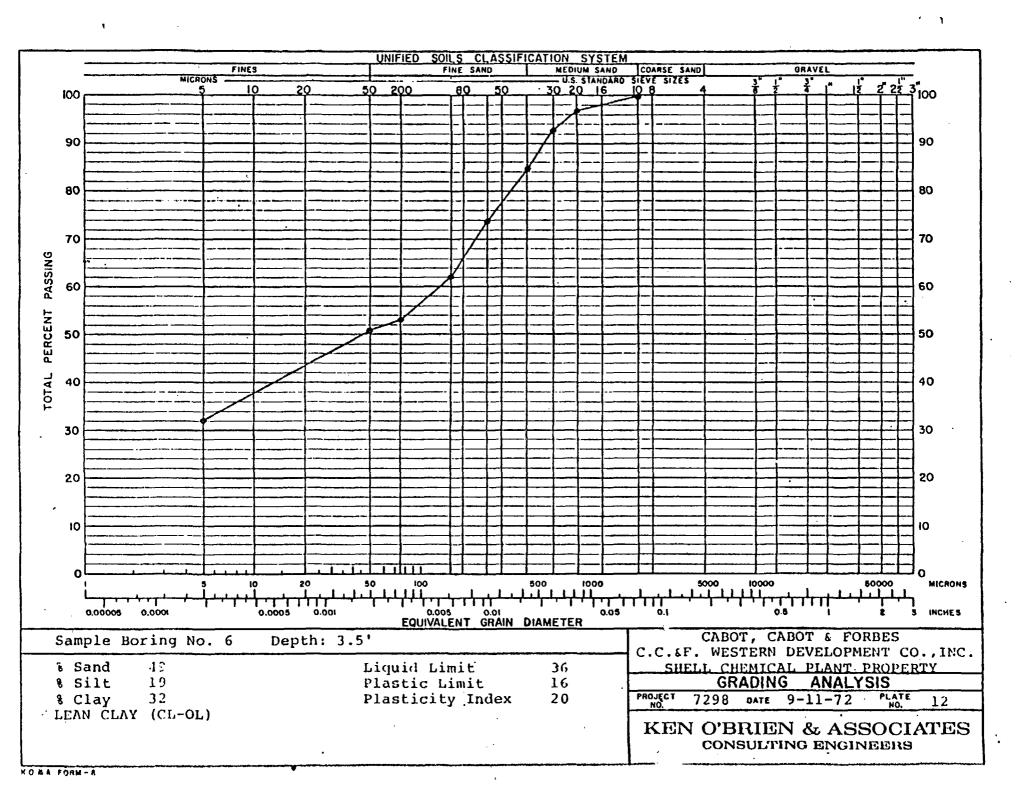
SHELL CHEMICAL PLANT PROPERT Los Angeles, California

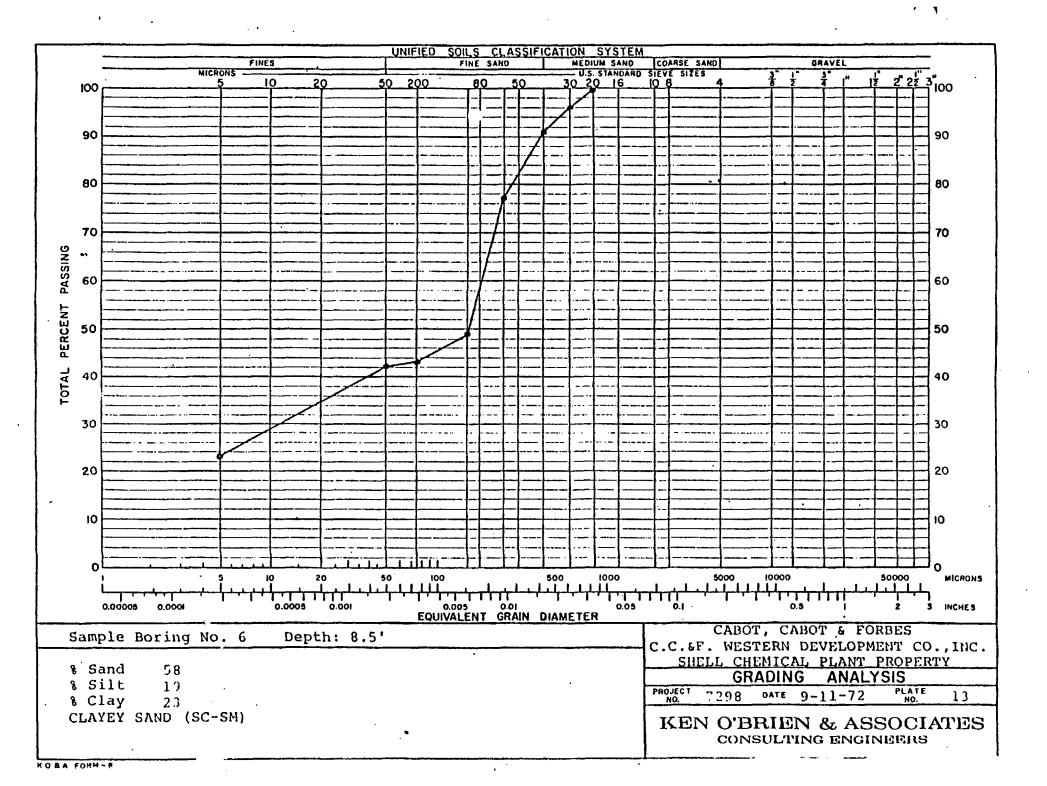
DRWN BY: V.R.W. DATE: 9-14-72 JOB NO. PLATE N CHKD. BY: H.L.T. DATE: 9-20-72 7298 4

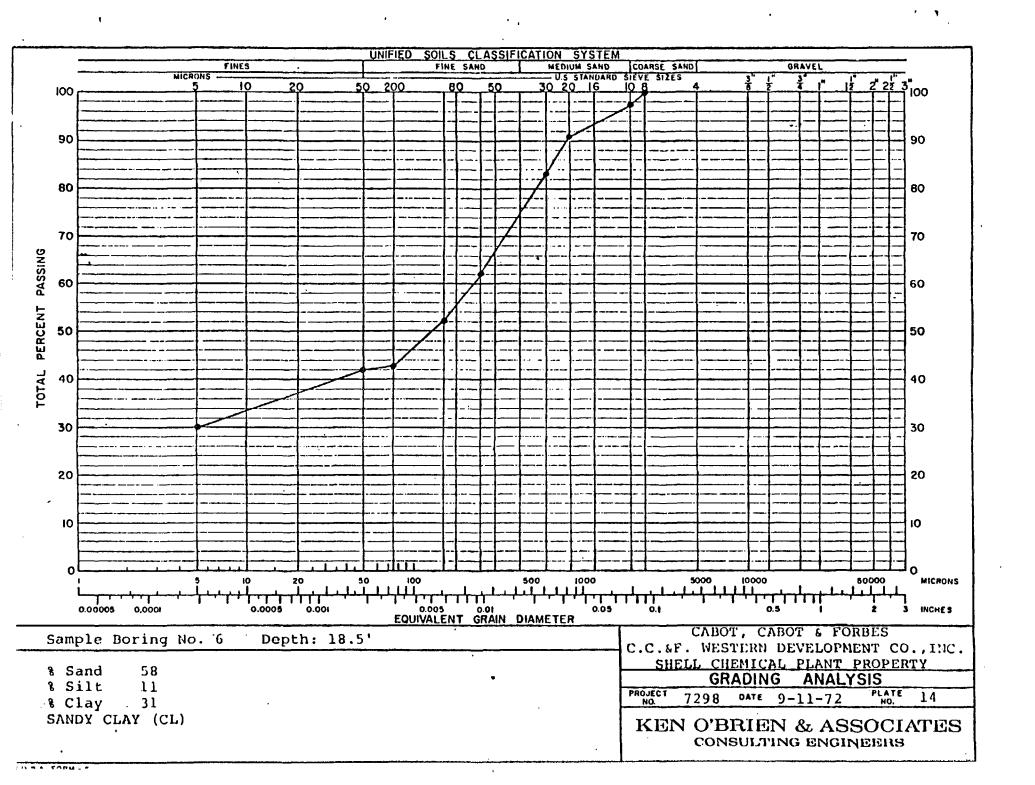


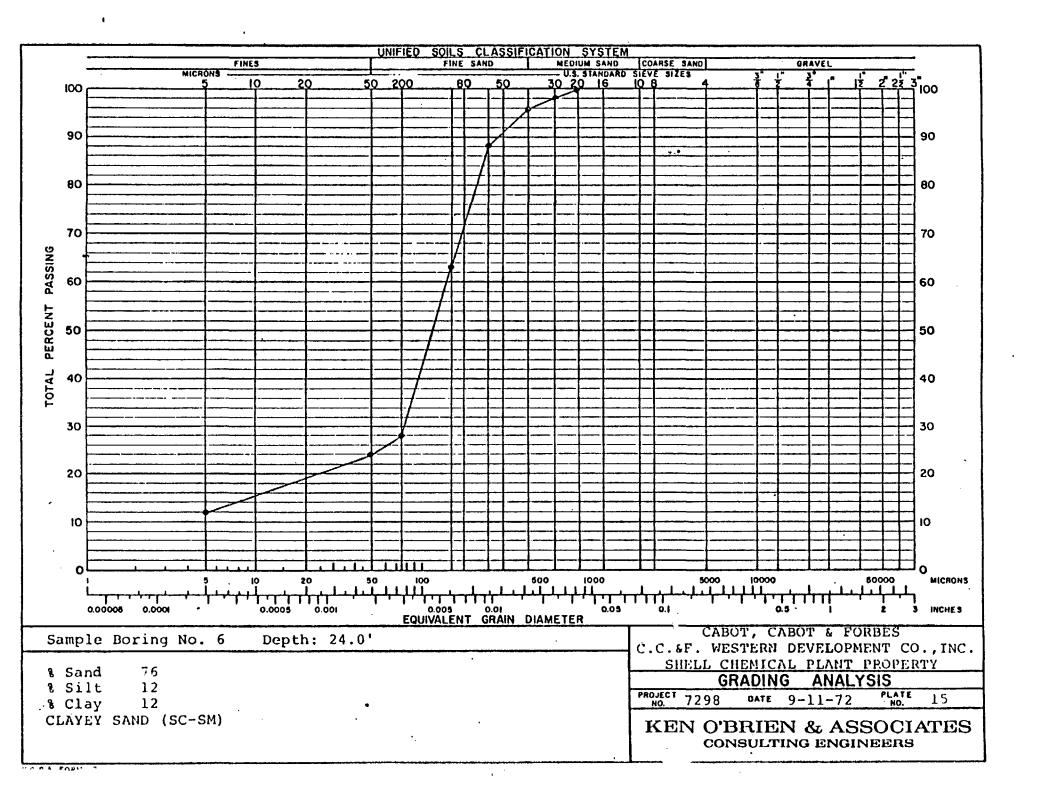


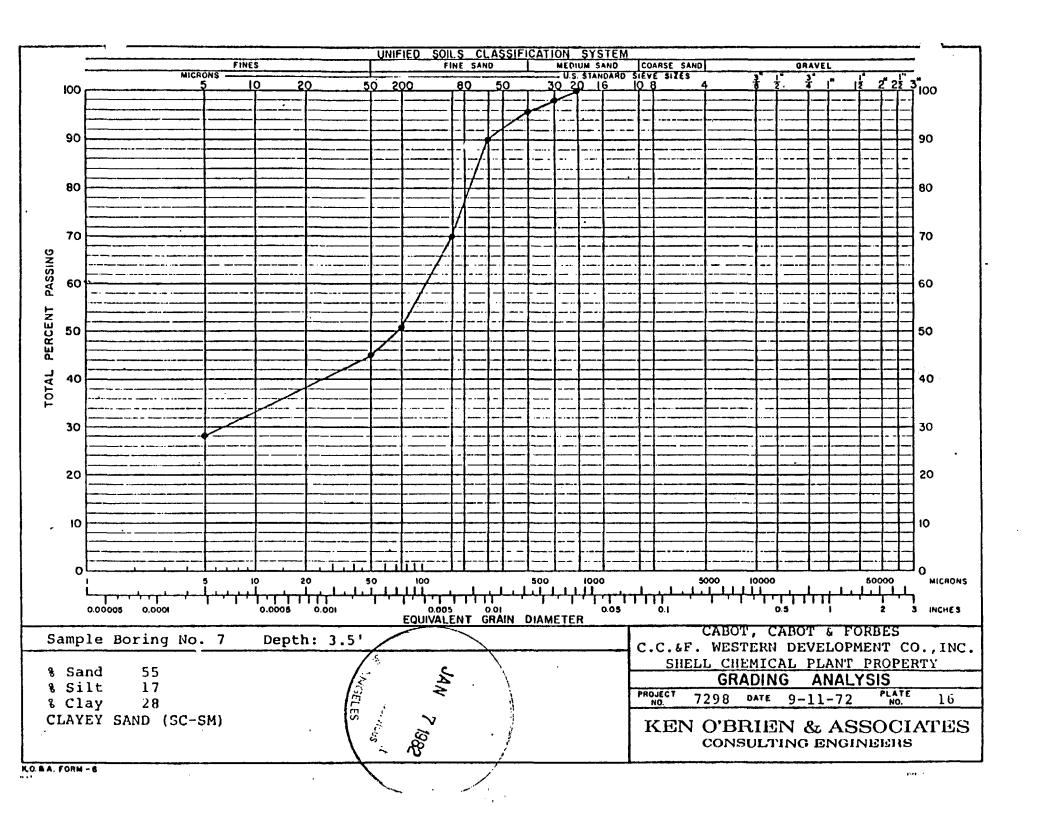


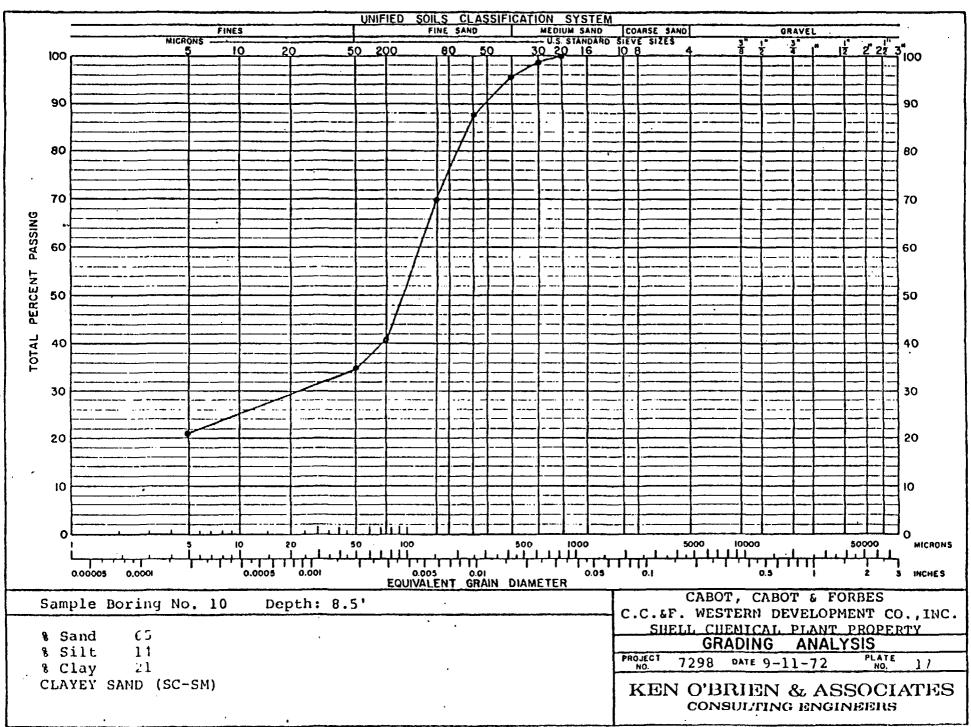


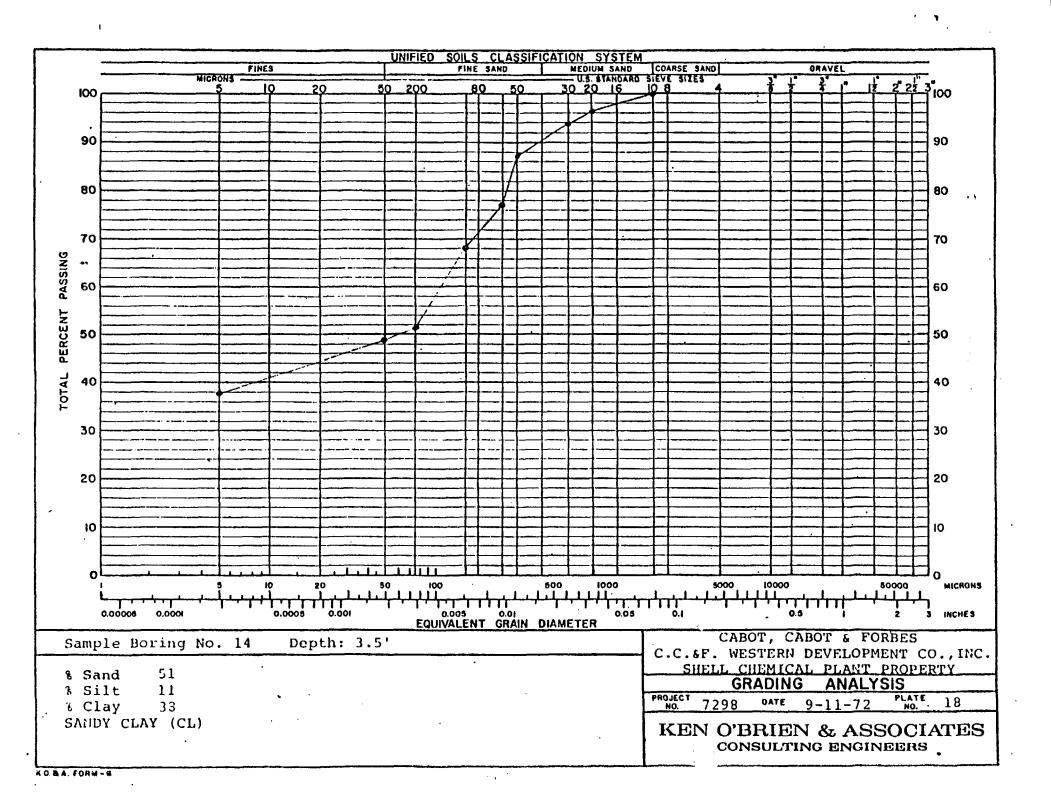


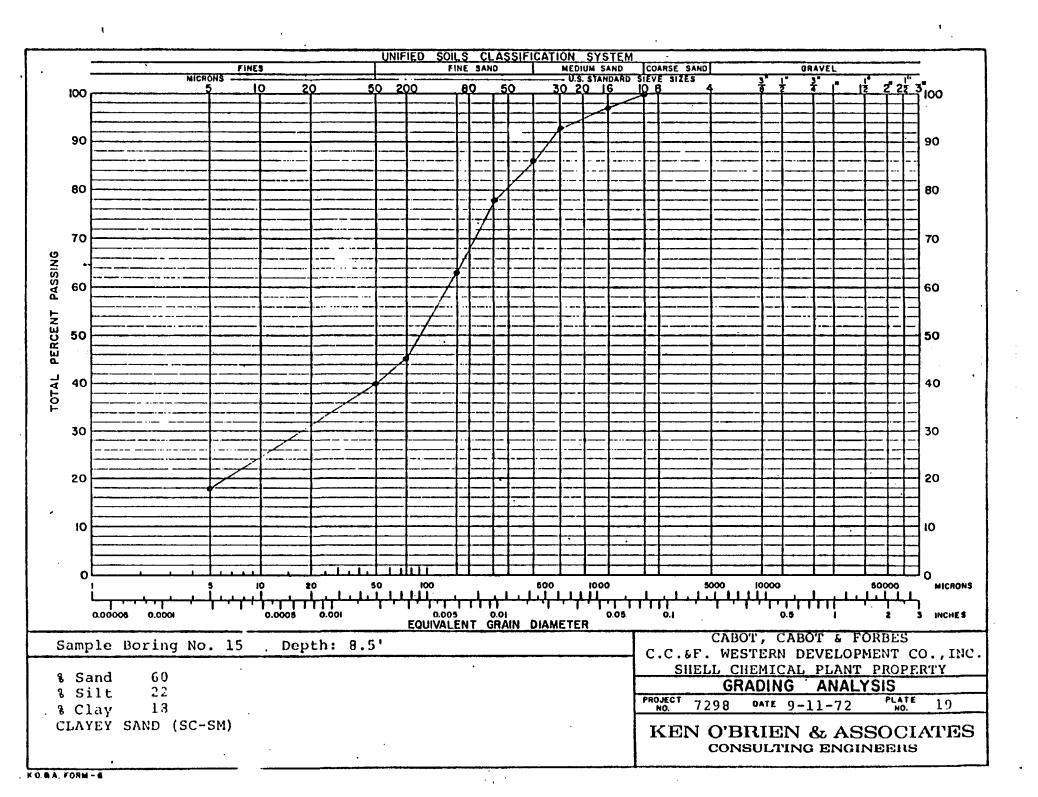


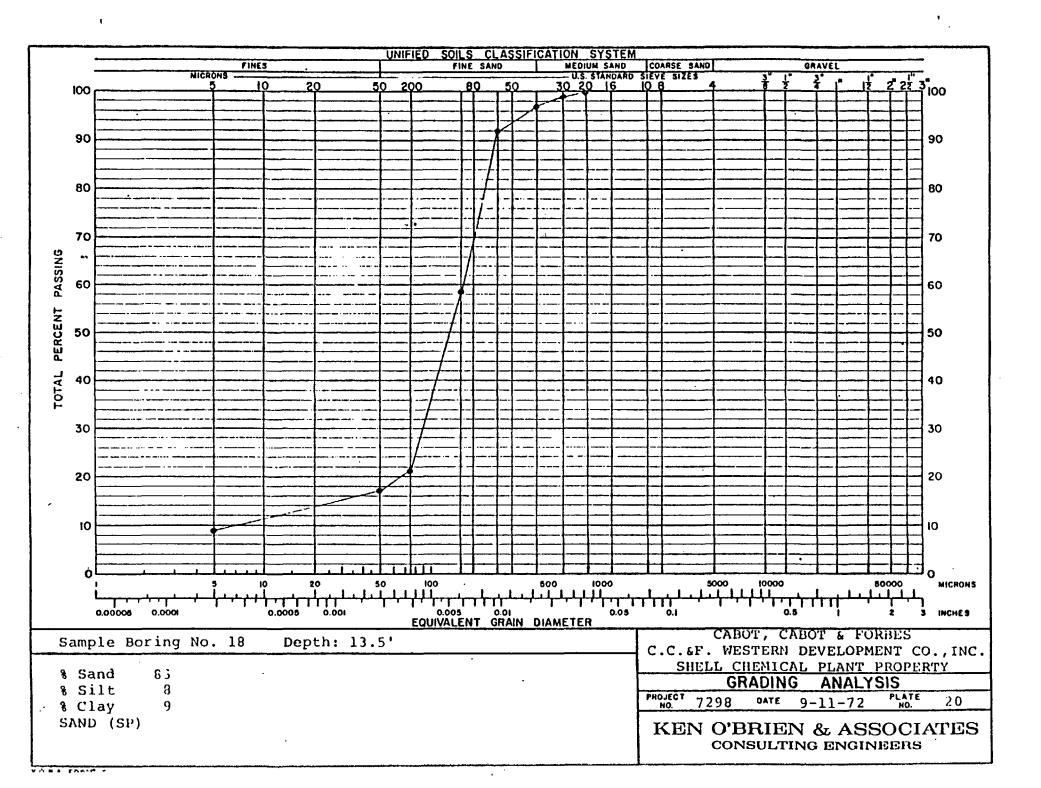


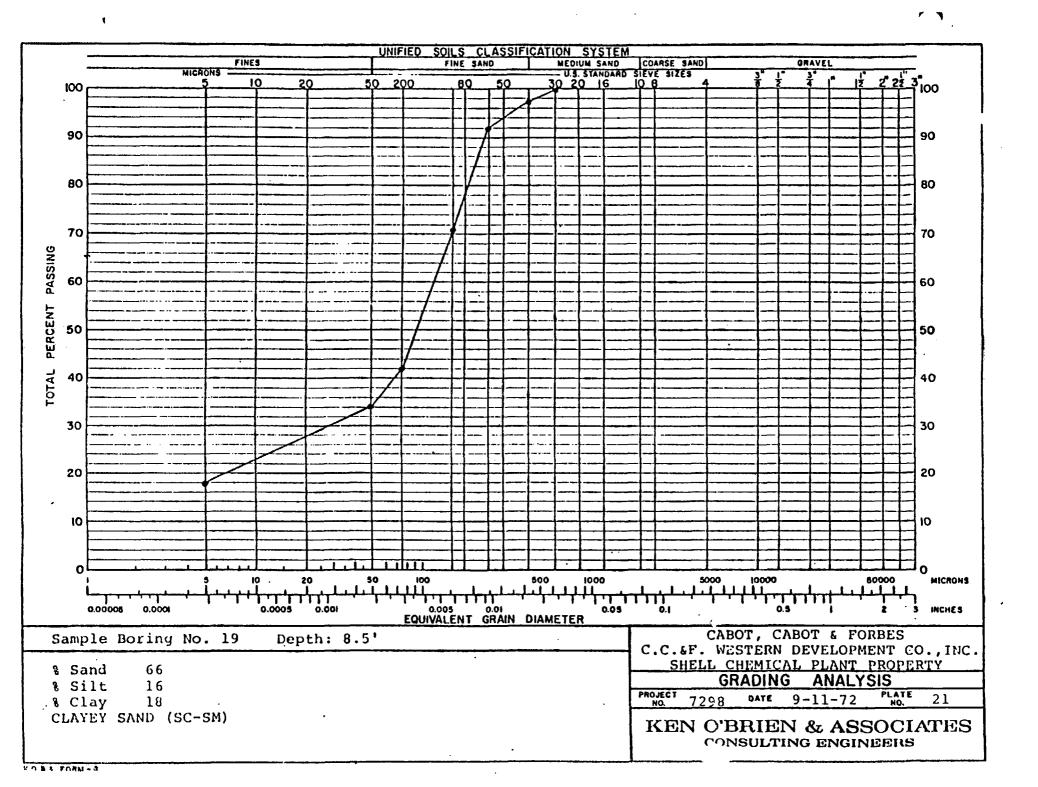


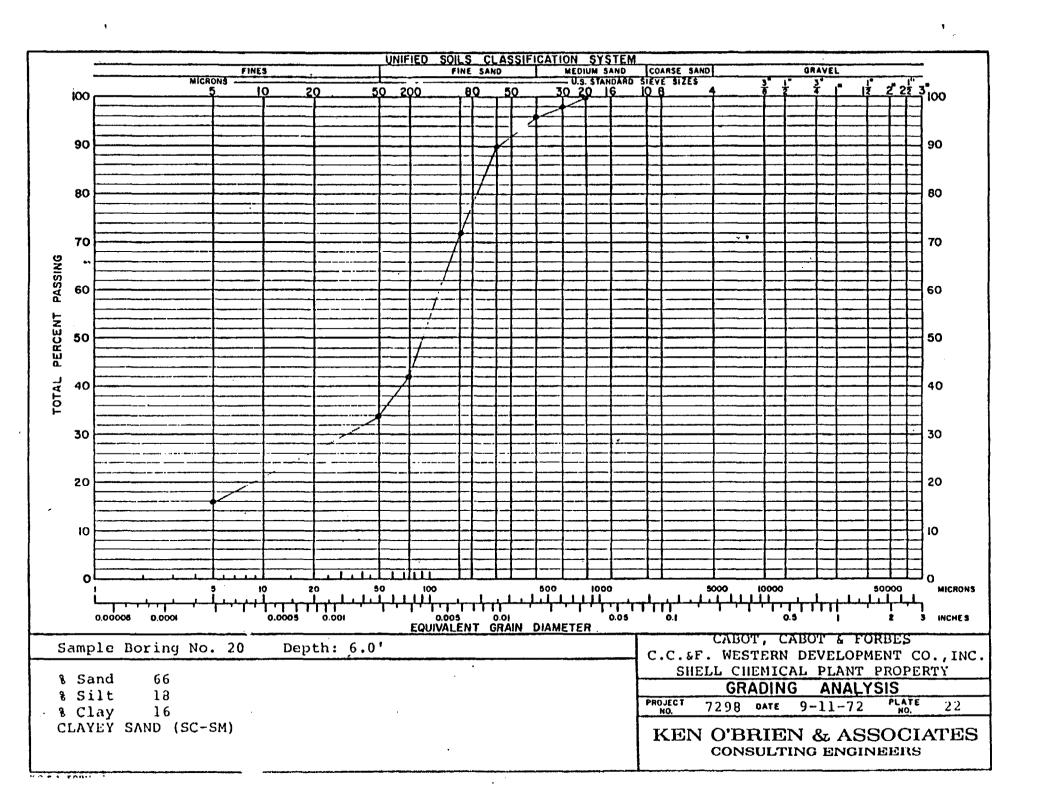


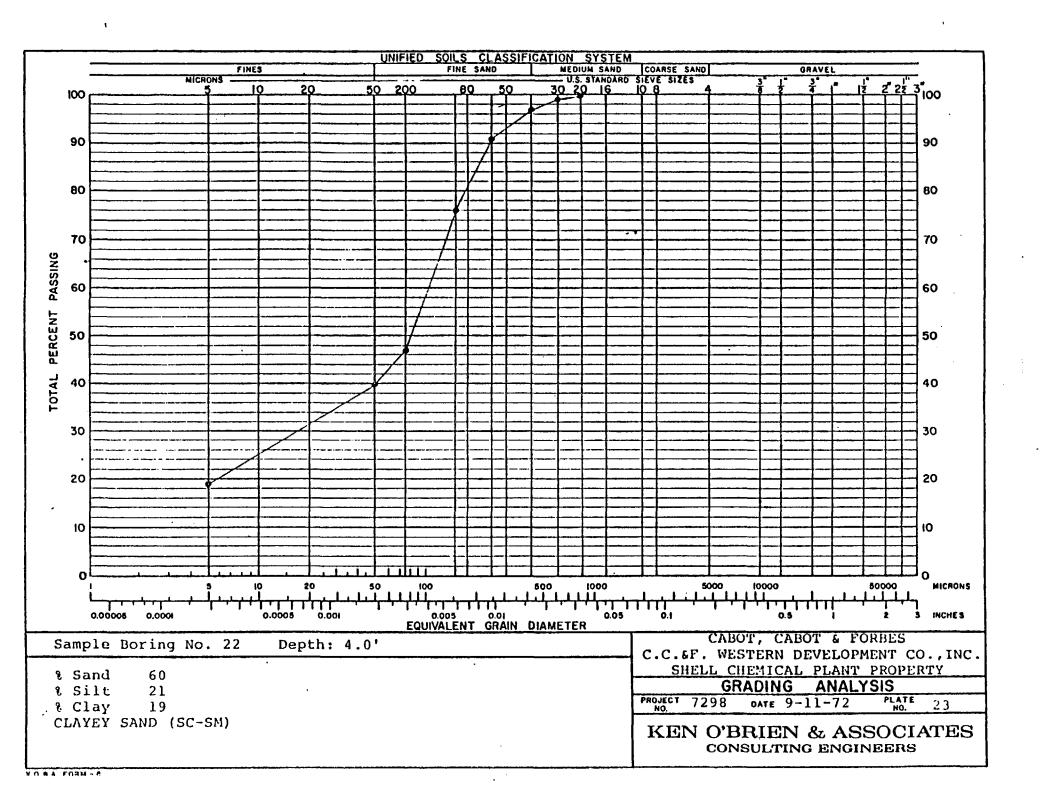












CABOT, CABOT & FORBES C.C.&F. WESTERN DEVELOPMENT CO., INC. SHELL CHEMICAL PLANT PROPERTY

ATTERBERG LIMITS

| Boring No. | Depth of Sample | Soil Class | Liquid Limit | Plastic Limit | Plasticity Index |
|---------------|--------------------|-------------|-----------------|------------------|---------------------|
| 1 | 3.5 | LEAN CLAY | 37 | 17 | 20 |
| . з . | 3.5 | SANDY CLAY | 43 | 20 | 23 |
| 5 | 3.5 | CLAYEY SAND | . 35 | 17 | 18 |
| 6 | 3.5 | LEAN CLAY | 36 | 16 | 20 |
| 6 | 13.5 | SILTY SAND | 20.7 | N/A | Ń/A |
| 16 | 4.5 | SANDY CLAY | 32 | 22 | 10 |

EXPANSION TEST AND DIRECT SHEAR TEST

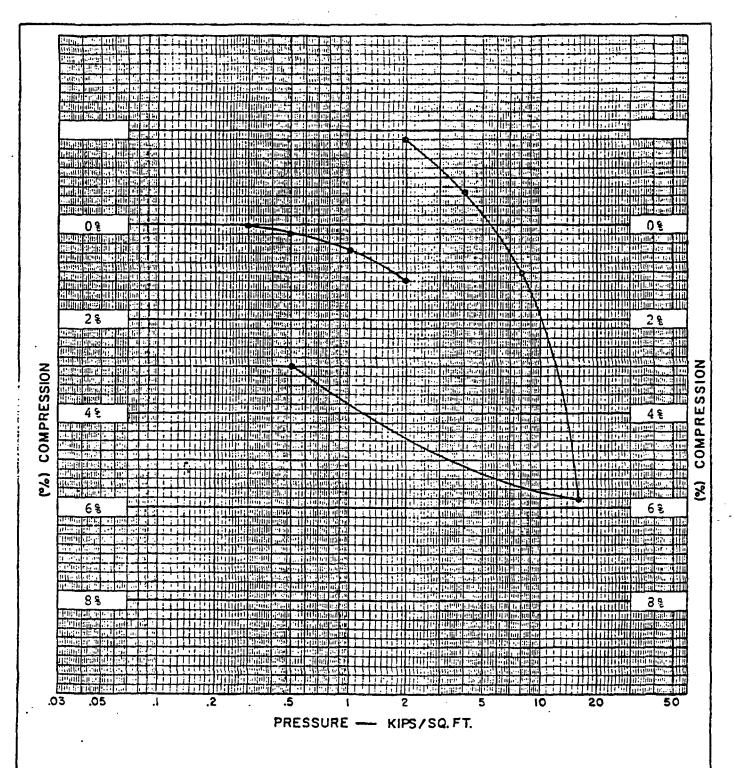
| Boring No. | Depth of Sample | Soil Class | Percent Expansion | Cohesion (lbs/ft ²) | Angle of Internal Friction | | |
|------------|--------------------|--------------|----------------------|---------------------------------|----------------------------------|--|--|
| 6 | 3.5 | LEAN CLAY | 0.95 | 1,200 | 24 | | |
| 7 | 3.5 | CLAYEY SAND | . 0.44 | 1,100 | 26 | | |
| 10 | 8.5 | CLAYEY SAND | 0.75 | 900 | 30 | | |
| 11 | 8.5 | SILTY SAND | 0.23 | 800 | 32 | | |
| 15 | 8.5 | CLAYEY SAND | 0.75 | 1,400 | 26 | | |
| 16 | 4.5 | SANDY CLAY , | 0.76 | 1,450 | 28, | | |
| 20 | 6.0 | CLAYEY SAND | 0.23 | 1,400 | 24 | | |
| 22 | 4.0 | CLAYEY SAND | 0.29 | 1,300 | 29 | | |
| | | | | | | | |

CABOT, CABOT & FORBES C.C.&F. WESTERN DEVELOPMENT CO., INC. SHELL CHEMICAL PLANT PROPERTY

UNCONFINED COMPRESSION TEST RESULTS

| Boring No. | Depth to Sample | Soil Classification | StrengthKsf |
|------------|-----------------|---------------------|-------------|
| 6 | 3.5' | LEAN CLAY | 4.0 |
| 7. | 3.5' | CLAYEY SAND | 8.8 |
| 10 . | 8.5' | CLAYEY SAND | 5.1 |
| .11 | 8.51 | SILTY SAND | 8.8 |
| 15 | 8.5' | CLAYEY SAND | 12.4 |
| _6 | 4.5 | SANDY CLAY | 10.2 |
| 20 | 6.0' | CLAYEY SAND | 3.1 |
| 22 | 4.01 | CLAYEY SAND | 6.2 |

NOTE: Refer to Plate No's. 5 and 6 for boring locations and typical subsurface soil conditions.

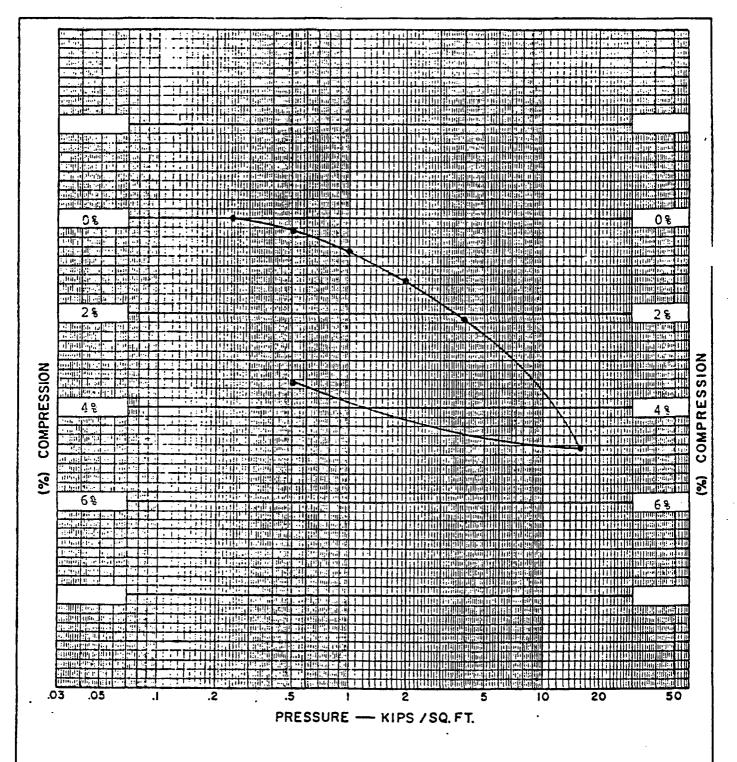


| BORING NUMBER 6 |
|-------------------------------------|
| SAMPLE NUMBER |
| DEPTH (FEET) 3.5 |
| CLASSIFICATION (CL-OL) LEAN CLAY |
| HEIGHT (INCHES) |
| DIAMETER (INCHES) |
| INITIAL MOISTURE CONTENT (%)16 |
| INITIAL DRY DENSITY (LB./CU.FT. 113 |
| SPECIFIC GRAVITY : |
| FINA MOISTURE CONTENT (%) |
| LIQUID LIMIT36 |
| PLASTIC INDEX 20 |

CABOT, CABOT & FORBES
C.C.&F. WESTERN DEVELOPMENT CO., INC.
SHELL CHEMICAL PLANT PROPERTY

CONSOLIDATION TEST

DR. BY: DATE:9/17/72 PROJECT PLATE NO. DATE: 9/17/72 7298 26

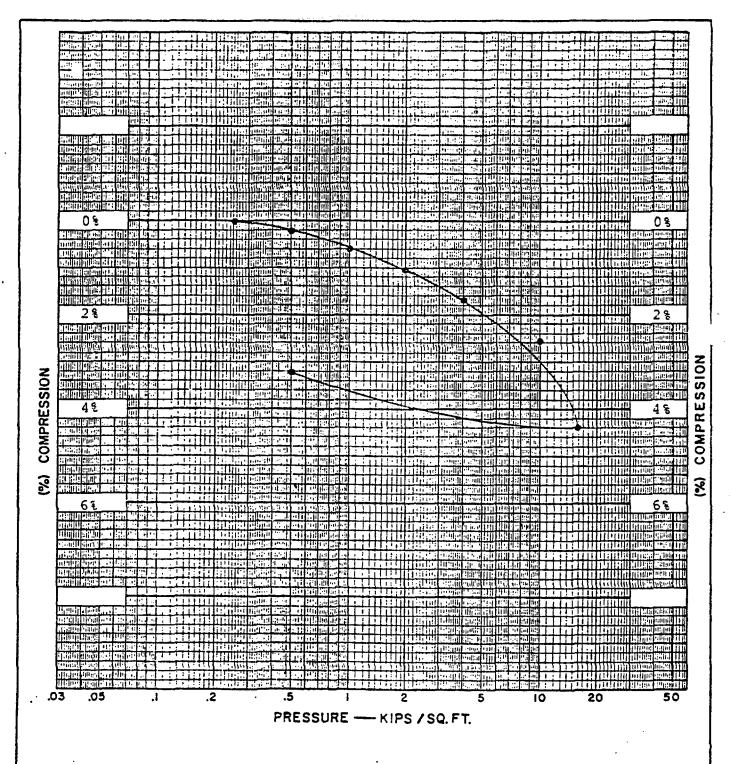


| BORING NUMBER6 |
|-------------------------------------|
| SAMPLE NUMBER |
| DEPTH (FEET) 13.5 |
| CLASSIFICATION (SM) SILTY SAND |
| HEIGHT (INCHES) |
| DIAMETER (INCHES) |
| INITIAL MOISTURE CONTENT (%) 13 |
| INITIAL DRY DENSITY (LB./CU.FT. 110 |
| SPECIFIC GRAVITY; |
| FINAL MOISTURE CONTENT (%) |
| LIQUID LIMIT |
| PLASTIC INDEX |

CAPOT, CABOT & FOREES
C.C.&F. WESTERN DEVELOPMENT CO., INC.
SHELL CHEMICAL PLANT PROPERTY

CONSOLIDATION TEST

| DR. BY: | V~ L | | PLATE NO. |
|------------------|--------------|------|-----------|
| снк. ву: W - D - | DATE 9/17/72 | 7298 | 27 |

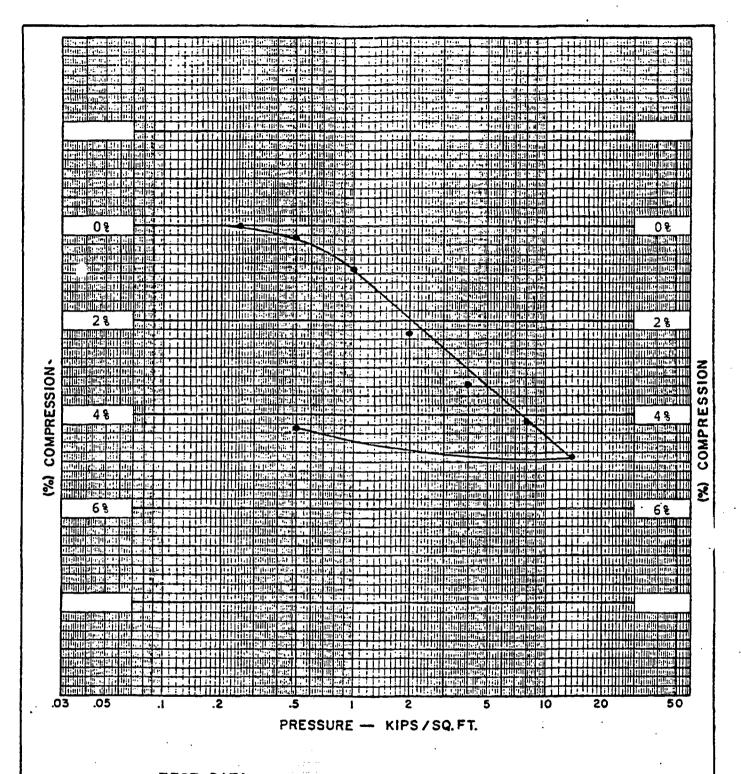


| BORING NUMBER15 | |
|-----------------------------------|---------------|
| SAMPLE NUMBER | |
| DEPTH (FEET) 3.5 | . 3 // |
| CLASSIFICATION (SC-SM) CLAYEY | <u>.34</u> .0 |
| HEIGHT (INCHES) | |
| DIAMETER (INCHES) | |
| INITIAL MOISTURE CONTENT (%) | 12 |
| INITIAL DRY DENSITY (LB./CU. FT 1 | : 7 |
| SPECIFIC GRAVITY; | |
| FINAL MOISTURE CONTENT (%) | |
| LIQUID LIMIT | |
| PLASTIC INDEX | |

CABOT, CABOT & FORBES
C.C.AF. DESTERM DEVELOPMENT CO., INC.
SHELL CHEMICAL PLANT PROPERTY

CONSOLIDATION TEST

DR. BY: U.D. DATE: PROJECT PLATE NO. DATE: 9/17/72 7298 28



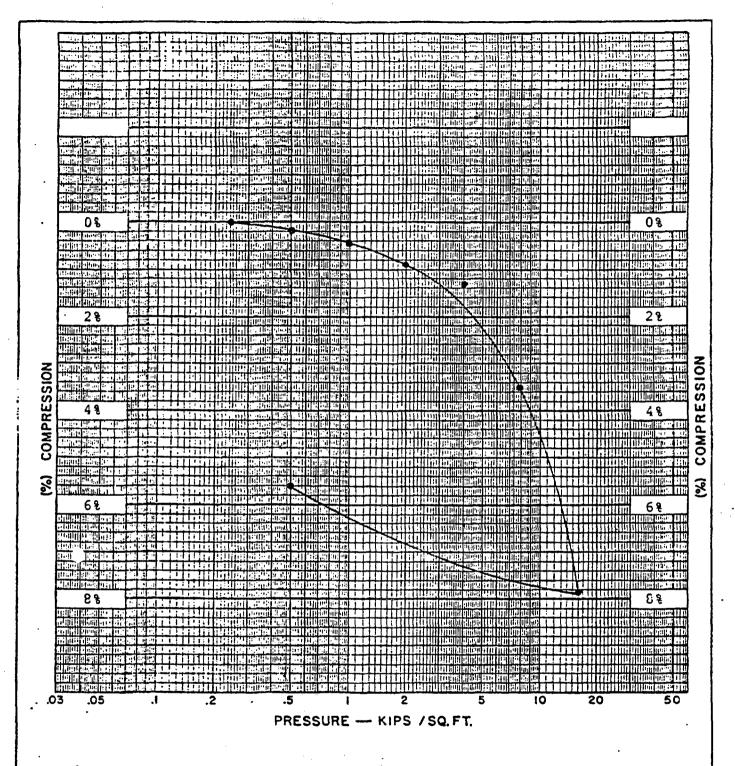
| BORING NUMBER | .6 |
|---------------------------|-------------|
| SAMPLE NUMBER | |
| DEPTH (FEET) 4 | .5 |
| CLASSIFICATION (CL) S | ANDY CLAY |
| HEIGHT (INCHES) | |
| DIAMETER (INCHES) | |
| INITIAL MOISTURE CONTEN | T (%) 16 |
| INITIAL DRY DENSITY (LB.4 | CU. FT. 118 |
| SPECIFIC GRAVITY | |
| FINAL MOISTURE CONTENT | |
| LIQUID LIMIT3 | |
| PLASTIC INDEX1 | |

CABOT, CABOT & FORBES
C.C.&F. WESTERN DEVELOPMENT CO., INC.
SHELL CHEMICAL PLANT PROPERTY

CONSOLIDATION TEST

| DR. BY: | | DATE: | PROJECT | PLATE | NO. |
|----------|------|--------------|---------|-------|-----|
| CHK, BY: | W.D. | DATE 9/17/72 | 7298 | 29 | |

KEN O'BRIEN & ASSOCIATES



| BORING NUMBER |
|--------------------------------------|
| SAMPLE NUMBER |
| DEPTH (FEET) 6.0 |
| CLASSIFICATION (SC-SM) CLAYEY SAND |
| HEIGHT (INCHES) |
| DIAMETER (INCHES) |
| INITIAL MOISTURE CONTENT (%)16_ |
| INITIAL DRY DENSITY (LB./CU. FT. 111 |
| SPECIFIC GRAVITY |
| FINAL MOISTURE CONTENT (%) |
| LIQUID LIMIT |
| PLASTIC INDEX |

CABOT, CABOT & FÖRBES
C.C.&F. WESTERN DEVELOPMENT CO., INC.
SHELL CHEMICAL PLANT PROPERTY

CONSOLIDATION TEST

DR. BY: DATE: PROJECT PLATE NO. DATE: 7298 30

BORING LEGEND

SPT

Standard Penetration Test

Penetration Resistance - 3

Number of blows required to drive 1.50-inch I.D. split spoon sampler 6 inches with a 140-pound hammer falling 30 inches.

SS

2.43-inch I.D. split spoon sampler with 1-inch rings and/ or 5- or 6-inch sleeves, utilizing a 4,000-pound Kelly as a reaction.

В

Bag Sample

(18)

Moisture Content - % dry weight

(SC-SM)

Unified Soil Classification

| <u>.</u> | · | | | <u></u> | | | | | | | | | | | , | _ |
|--------------------|---|----------|----------|--------------------------------|----------|--|---------|----------|----------------|------------------------|-----------------|---------|-------------------|-------------------------|----------------------|-----|
| | 1.00 | OF | BC | RI | N | G | t | | | | | | | | SHEET | - 1 |
| - | | | | | | | | | | , | • | | _ | | <u>I</u> OF <u>2</u> | 4. |
| PF | ROJECT CABOT, CABOT & C.C.&F. WESTERN DEVEL | FORBES | - | T110 | | SUF | FAC | | | VA | LIOI | ł | | | OF BORING 8-14-72 | - |
| | SHELL CHEMICAL PLA | | | | · | | 3 | 3. | 5 ' | | | | | | 8-14-72 | - |
| TY | | SAMPLES | | | -1 | HAN | ME | R | | | | | | | O WATER | ┪ . |
| | 18" Bucket Auger | Distur | bed | /_ | - 1 | ••• | 14 | 0 : | | | | | | | | |
| - | 10 Bucket Mudel | Undist | urb | | _ | | fa | 11: | lne |] | 30' | ' | 1_ | ., | one | 4 |
| DEPTH FROM SURFACE | | | | SAMPLE INTERVAL PENETRATION | щ | • | | | | | | | | DRY UNIT WEIGHT-PCF. | | |
| N N | • | - | SYMBOL | SANPLE INTERVIPENTE PENETRATIO | ž | | ـــــ | | | ٠ | | | | Ξª | Į. | - (|
| 9 | CLASSIFICATION OF MAT | ERIALS | ₩ | | ST | | | | | , | | | | 12 = | | İ |
| E | . (in feet) | | SΥ | E K | ESI | | P L & | 0137 | URE | | TENT | - W. | | 785 | | 1 |
| 8 | | | | 2 0 | ۳ | | | 2,0 | | NA I ₂ O | T. | | 0 | <u>}</u> | <u> </u> | _ |
| | LOCATION: Refer to 1 | Plate No | ٠. | | | | | | | | | | | | • | |
| | LEAN CLAY: fine sand | , silty, | | TT | | | П | T | T | | П | | |] | moist | 7 |
| | | | | | | | П | I | I | \Box | П | | \Box | | | Į |
| <u></u> | | | | | | 4. | 1-1 | 4 | 1 | | \sqcup | - | 4 | 4 | | • |
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| 4 | | | SS | 11 | | | | | 1 | | | | | ٦,,, | . | į |
| | • | * **; | 33 | Ш_ | | | | 工 | 97 | \Box | | | | 1117 | | Ì |
| 5 | | | | 44 | | | ++ | 4 | 4- | - | | | 1 | 4 | moist | 1 |
| 6 | CLAYEY/SILTY SAND: fi | | | | - { | | ╂-┼ | + | ╬ | - | | | | - | |]. |
| | sand, light brown (SC | ,-5m) | _ | | ı | + | H | 十 | ╁. | 1 | - | +- | \vdash | - | | |
| 7 | | | В | | į | | | 11 | 7 | | | | | | | - |
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| 8 | | | | 11 | J | - | ++ | + | 4 | ╀ | \sqcup | _ | | 4 | | |
| - | CTIMU CAMP Simulation | | | - - | | - | ╂┼ | -}- | ╀ | + | \vdash | | - | - | | 1 |
| 1 | SILTY SAND: fine sand clayey, slightly mica | Ceous | SS | | ł | | ┝┼ | 芈 | \ | 1 | H | +- | - | 134 | | |
| 10 | several pea sized bro | wn clav | | 11- | \dashv | | 1 | _ | 1 | 1 | | | | | } | 1 |
| | pebbles, light brown | (SM-SC) | | | | | П | | I | | П | \Box | |] | | ł |
| | • | · | | | | | 11 | 4 | 4 | - | | | - - | 4 | ļ | 1 |
| 12 | | | | | 1 | - | ╂╌┼ | + | + | ╁ | $\vdash \vdash$ | | - | - | 1 | |
| 1 | SAND: fine sand, silt | -37 | | | ł | + | + | + | + | + | | | + | 1 | | 1 |
| 13 | micaceous, light brow | n (SW) | | | 1 | 1 | | _ | + | 1 | H | + | - | 1 | | |
| 1 | | () | | Ш_ | | | | 工 | I | | | | |] | | |
| 14 | CANDY OF ALL | | SS | | | - | 101 | 16 |) | 1 | | 1 | | 105 | moist | } |
| 15 | SANDY CLAY: fine sand | | | | \dashv | - | ╁╌Ӻ | + | 1 | <u> </u> | | | - | - | 1 | |
| 1 | slightly micaceous, l brown (CL) | 7911C | _B | ++ | | + | ╉╼┥ | -1 | $\frac{1}{18}$ | ╁╌ | \vdash | | | - | moist to | - 1 |
| 16 | | | | | | \vdash | †+ | 十 | 十 | T | † † | + | - | 7 | wet | |
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| 18 | | | | + | | - | +-+ | | + | 1 | | + | - | 4 | | |
| 19 | | | SS | | ì | - | +-+ | + | + | 12 | 7 } | + | - | ┪ | wet | 1 |
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| 20 | | | | 11_ | | | | 丁 | I | | | | | 1 | | _] |
| R.O. 6 | A.FORM - 16 | | | | | | | | | | | | | RING | | |
| | • | | | | | | | | | | | | PL | ATE ! | vo31 | |

| | PROJECT 7298 | LOG | OF | ВС |) [| RIN | G | | | | | | | | | | | | SEET OF <u>2</u> |
|--------------------|-----------------------|-----------------------------------|-------------|--------------|-----------------|---------------------------|--------------|----------------|--------|---|----------|------------|--------------|----------------|--------------------|--------|-------------------------|--------------|---------------------|
| DEPTH FROM SURFACE | | ATION OF MATER (in feet) | RIALS | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | P & | . 🚣 | 1570 | _ | CON MAT | | ₽ (| L 5,0 | | DRY UNIT WEIGHT-PCF. | • | |
| 20 | | | | , | | , | | , - | | <u>, </u> | | 1 1 | | | • | | | , | |
| 21 | SANDY CLAY micaceous, | <pre>fine sand, light brown</pre> | (CL) | | | | | # | \pm | \pm | | | \downarrow | \pm | 土 | | | | |
| 22 | | | | | | | | \pm | \pm | \pm | | | \exists | \pm | \pm | | | | |
| 23 | | | | | | | | \dashv | + | + | | | \dashv | + | + | H | | | |
| Į | | | | | 1 | | | 1 | # | 1 | | | 1 | # | 1 | | | | |
| 24 | | | | SS | | | | \pm | | | | - | + | 5 | \pm | | 79 | -wet | (?) |
| 25 | ም ርጥልፕ | DEPTH 25.0' | | | T | | П | 1 | Ŧ | 1- | | | 1 | 4 | Ŧ | | | | |
| 26 | TOTAL | DEFIN 23.0 | | | | | | 士 | ‡ | 1 | | | | \pm | 1 | H | | | |
| 27 | | | | | | | | + | ╫ | + | | H | \dashv | + | ╁ | H | | | |
| 28 | • | | i | | | | | 7 | | F | | | 4 | 1 | \bot | | | | |
| | | | | | | | | # | 士 | | | | 1 | \perp | 上 | | | | |
| 29 | | | | | | | \dashv | + | + | + | | - | \dashv | + | + | H | | | |
| 30 | | | | | | | | 1 | - | | | | 7 | 1 | 丰 | 口 | | | |
| 31 | | | | | | | | | \pm | | | | 1 | \pm | | | | | • |
| 32 | | | | | | | \exists | | \top | - | | \square | 4 | \blacksquare | T | \Box | | | |
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| 33 | | | | | | } | \dashv | + | + | - | | | \dashv | + | + | H | | | •_ |
| 34 | | | | | | [| \exists | 1 | T | - | | | 7 | 7 | T | | | | |
| 35 | | | | | | | | \pm | | | | | 1 | 士 | 上 | | | | • |
| 36 | | | | | | } | + | + | + | | \dashv | \dashv | + | + | + | H | | | • |
| 1 | | | | | | ļ | 1 | 1 | 1 | П | Ц | H | 1 | + | 1 | 口 | | | |
| 37 | | | Į. | | | ł | \exists | \perp | \pm | | | | \pm | \perp | 士 | | | | |
| 38 | | | • | | | F | + | + | + | | | \Box | + | - | \perp | \Box | | | |
| 39 | | | | | | ţ | \downarrow | 土 | 丰 | Ħ | | | \downarrow | | # | 目 | | | |
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| 40 | | • | | | | ļ | 1 | 1 | 上 | | | | \downarrow | 1 | 上 | 口 | , | | |
| 41 | | | | | | ŀ | + | \pm | \pm | | \dashv | | + | \pm | \pm | | | | • |
| 42 43 | | · | į | | $\ \ $ | F | 7 | Ŧ | F | | | | 7 | T | $oldsymbol{\perp}$ | | ! | | |
| 43 | | : | | | | t | 1 | 1 | | | | | # | 1 | 1 | 日 | | | |
| 44 | | • | | | $\ $ | } | - | + | + | H | \dashv | \dashv | + | + | + | H | | | |
| 45 | | | | | | | 1 | # | L | | | | 1 | \pm | # | 口 | | | ٠. |

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|--------------------|--|--|--------|----------------|---------------------------|----------|----------|---------|----------|-------------------|--------|-----------------|----------|----------|---------------------------|-----------------------|
| | | OF | BC | F | RIN | G | 4 | 2 | | | | | | | | SHEET 1 OF 1 |
| PR | OJECT CABOT, CABOT & C.C.&F. WESTERN DEVELO | FORBES | 'O 3 | N | | Si | JRF | | | | ATIC | N | T | | DATE | OF BORING 8-14-72 |
| L | SHELL CHEMICAL PLAN | NT PROPE | | | | | | | 7.9 | · · | | | <u> </u> | COM | PLETER | 8-14-72 |
| TY | | SAMPLES Distur | bed | , | | н | MMA I | | 11 | s | | | | OEF | | O WATER |
| | 18" Bucket Auger | Undist | | | | _ | | | | | 30 | " | 1 | | | ione |
| DEPTH FROM SURFACE | | | | RVAL | PENETRATION RESISTANCE | | , | | , | | | , | | ļ | DRY UNIT WEIGHT - PCF. | |
| OM St | CLASSIFICATION OF MAT | ERIALS | SYMBOL | HIE | TAN | | | | J | | | · | | | N F | |
| TH FI | (in feet) | - | SYN | SAMPLE INTERVA | ESIS | - | PL | | STUR | | ONTER | T % | | - | DRY UN | |
| 8 | | ······································ | L | 3 | 2 2 | | | | ,0 | | NAT. | ,0 | 8,0 | | _ ≯ | |
| | LOCATION: Refer to I | | | | | | | | | | | , -, | | | | |
| - | CLAYEY SAND/SANDY CLA heavily oil-saturated | AY: l. brown | | | | \vdash | + | + | H | + | ╁ | - | ╁ | H | | moist |
| | to black, very viscou | ıs, | | | | | | 丰 | 口 | | 1 | | 1 | \Box | | |
| 2 | sticky, odorous (SC-C | :L-OL) | | | | Н | \dashv | +- | H | \dashv | + | \vdash | +- | + | |] |
| 3 | | | | | | | 1 | | | | 工 | 口 | 1 | | | |
| 4 | | | SS | | | | + | +(-) | 4 | + | +- | | ╁╴ | \vdash | 123 | |
| 5 | | | | | | | 1 | 1 | П | 1 | 1 | | 1 | | | |
| | | | | | | \vdash | + | +- | ╂┼ | \dashv | +- | \vdash | + | \vdash | | Note: |
| 6 | • | | | | | | | - | | 1 | T | \prod | T | | | sunk |
| 7 | | | | | | | 士 | | | 士 | 1 | | 土 | | | without pressure |
| В | · | | | | | \vdash | | } | \vdash | 4 | | - | + | - | | hole caved |
| | | | | | | | 土 | | | 士 | 士 | 廿 | 1 | | | due to |
| 9 | | | | | | \vdash | + | + | H | + | +- | | ╁ | \vdash | | viscous tar matrix |
| 回 | | | | | | | | | 口 | \downarrow | 丰 | 口 | 1 | | | |
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| | | | | | | | 1 | 丰 | | 1 | 1 | | # | | | |
| | Refusal on old concre | te slab | | | | \vdash | + | + | ╂┤ | \dashv | + | | ╁ | + | | |
| 13 | ± 4'x5'x6" TOTAL DEPTH 13.0' | | | | | | 1 | 1 | 口 | 7 | 1 | | T | | | |
| 14 | TOTAL DEPTH 13.0° | | i | | | | 1 | \pm | | \pm | 1 | | 士 | - | | |
| 15 | • | | | | | П | T | 1 | | Ŧ | T | - | 1 | | | |
| | | | | | | | \pm | \pm | 廿 | + | \pm | | 士 | | | |
| 16 | ~ . | | | | | | Ţ | F | \prod | 1 | T | H | Ţ | | |] .] |
| 团 | 1 | | | | | | 士 | 士 | | 士 | \pm | | 士 | | | |
| 18 | | | ! | | | | Ţ | - | П | 4 | \bot | | \bot | | | |
| | | Į | | | | 냅 | 士 | \perp | \Box | + | \pm | | 士 | | | |
| 19 | • | | | | | | \perp | I | | $\overline{\bot}$ | - | H | 1 | - | | |
| 20 | | | | \prod | : | H | + | 1 | | + | 1 | | 士 | | | |
| | A. FORM - 16 | | | _ | | | | | | | | | В | ORI | NG N | 102 |

BORING NO. 2 PLATE NO. 32

| _ | | | | _ | - | | | | - | | | | | | | | SHEET | 7 |
|--------------------|--|---------------------------------------|--------|-----------------|---------------------------|---------------|-----------|----------|----------|----------------|---------|--------------|----------|-----------------|----------|---------------------|--------------------|-----|
| | LO | G OF | BC | F | RIN | G | | 3 | | | | | | | | | 1 OF 2 | |
| | OJECT CABOT, CABOT & | | | | | St | JRF | AC | Ε | ELE | ٧٨ | TIC | N | | | | OF BORING | 二 |
| (| C.C.&F. WESTERN DEVEL SHELL CHEMICAL PLA | | | ΙN | c. | | | 4 | 10 | . 2 | ١. | | | | L | ARTED | 8-14-72 8-14-72 | _ |
| TY | | SAMPLES | ,KII | _ | | H | AMA | AEF | ₹ | | | | | | | | TO WATER | ┪ |
| | 18" Bucket Auger | Distur | | | | | | | | 11 | | | | | | | None | |
| 1 | | Undist | urbe | | | | | İā | 11. | li | ng | 3 | 0 " | | <u> </u> | | | |
| DEPTH FROM SURFACE | | | | SAMPLE INTERVAL | PENETRATION RESISTANCE | | | | 1_ | | | | | | | UNIT T-PCF | | |
| S #0 | CLASSIFICATION OF MAT | ERIALS | B0 | IM. | TAN | | | | | | | | | - | | S - | : | İ |
| THE | (in feet) | , | SYMBOL | PLE | NE. | ┝ | l. | | | URE | | | | • | | DRY UN | | |
| 8 | | · · · · · · · · · · · · · · · · · · · | | SAI | P.E. | | | . 🚣 | |) | | AT. | | . L. | 0 | 3 | | |
| | LOCATION: Refer to | Plate No | • | | | | | | | | | | | | | | | |
| | CLAYEY SAND: fine sa | nd, | | Π | | | \Box | \bot | Ţ | T | I | Ŧ | | П | \Box | 7 | dry | |
| | dark brown (SC) SANDY CLAY: fine san | | | + | | H | + | + | + | + | ╁ | + | 十 | $\vdash \vdash$ | + | - | roist | |
| 2 | slightly micaceous, | | В | | | | \exists | # | \pm | 土 | 工 | | | 口 | |] | | |
| 3 | brown (CL) | | _ | | | | 4 | + | 4 | + | ╀ | + | - | \vdash | + | 4 | 7 | |
| H | | | | \dagger | | H | + | + | + | + | 十 | + | ╁ | H | \dashv | - | · | |
| 4 | | I | SS | T | | | | | , | 119 | 1 | | I | | | ٦,,, | l moist to | |
| 5 | | | | L | | | + | + | 7` | 7 | 1 | + | ╄ | \vdash | | ┦¯¯` | wet | ļ |
| | SANDY CLAY/SANDY SIL | T: fine | | l | | | | 士 | 士 | \perp | 上 | 土 | | | | 1 | | } |
| 6 | sand, micaceous, sli | | | | | | - | 4 | 4 | 1 | 1 | $oxed{\bot}$ | - | | | 4 | * | - |
| 7 | lighter in weight, l tan to brown (CL-ML) | ight | | | | \vdash | \dashv | + | + | - | ╁ | +- | ╀ | Н | + | 1 | ŀ | |
| | can do zzowii (ch .m, | | | | | | \Box | I | 1 | I | I | | | | | 7 | | ł |
| 8 | SILTY SAND: fine to | medium | | | | - | + | + | + | + | ╀ | + | ╀ | \vdash | + | -{ | moist | |
| 9 | sand, micaceous, lig | | SPT | | 13 | | 1 | | 力 | 1 | 土 | | | | | <u> </u> | | l |
| 10 | to brown (SM) | | SPI | \perp | 15 | | \dashv | 4 | 4 | 3) | T | \bot | \bot | | | 4 | | - (|
| | | | | | | H | \dashv | 十 | \dashv | + | + | + | ╁╴ | | + | - | | |
| | | | | | | | | 1 | 1 | | I | | | | | 7 | | |
| 12 | | | | | | \vdash | \dashv | + | + | + | ╀ | ╁ | ╁ | | | \dashv | | |
| | | | | | | | | 士 | 士 | 土 | 士 | 士 | | | |] | · | |
| 13 | | | | | | \square | \dashv | \bot | 4 | \perp | \perp | \perp | - | | | 4 | | 1 |
| 14 | | | SS | + | | \vdash | \dashv | + | + | 1/2 | † | + | + | H | + | - - - 1115 | moist to | |
| | SILTY SAND: fine san | | 55 | \perp | | | 1 | 1 | I | 1 | 1 | I | | | | 7**: | wet | |
| 15 | micaceous, clayey, 1 tan to brown (SM-SC) | ight | | | | $\vdash \mid$ | \dashv | - | + | + | + | + | \vdash | \vdash | 1 | - | | |
| 16 | can to brown (an-ac) | | | | | | _ | <u> </u> | + | _ | 士 | 士 | <u> </u> | | | _ | | |
| | | | | | | | \Box | \Box | 1 | 1 | Ţ | Ţ | L | | | 7 | | |
| 17 | | | | | | | \dashv | + | \dashv | + | + | + | + | $\vdash \vdash$ | - | - | | |
| 18 | | | | | | | \perp | \pm | 1 | \perp | 士 | 土 | | | | _ | | |
| <u></u> | | · | | \mathbb{H} | 6 | | \dashv | _ | 4 | $\overline{+}$ | 1 | \bot | \vdash | \Box | | - | moist | |
| 19 | • | | SPT | Н | 9 | ╁┤ | | + | 12 | 1 | + | + | + | H | - | - | | |
| 20 | | | | | 10 | | 二 | | I | 1 | I | I | | | | 1 | | |
| K.O. & | . A. FORM - 15 | | | | | | | | | | | | | | | RING | | _ |

PLATE NO.

| | PROJE CT 7298 | LOG | OF | ВС | RIN | IG | 3 | | | | | | SHEET 2 OF 2 |
|--------------------|-------------------------|-----------------------------|------|--------|--|----|-------------|--|---------|--|----------|-------------------------|-----------------|
| DEPTH FROM SURFACE | CLASSIFIC | ATION OF MATER (in feet) | IALS | SYMBOL | SAMPLE INTERVAL PENETRATION RESISTANCE | | PLA | , (STURE 2,0 3 | NAT. | | L S,0 | DRY UNIT WEIGHT-PCF. | · |
| 20 | | | | | · | · | | | | · | | · | |
| 21 | SILTY SANI (SM-SC) | : (continued) | | | | | | | | | | | |
| 22 | | | | | | | | | | - | 1 | | |
| 23 | | • | | - | | 廿 | | | | | | | |
| 24 | | | | ss | - | | ++ | | | | | | -moist |
| 25 | | | | | - | + | | | | | | | |
| 26 | TOTAL | DEPTH 25.0' | - 1 | | | | | | | + | | | |
| 27 | | | | | | | | | | ++ | + | | |
| 28 | | | | : | | | | 廿 | | + | | | |
| 29 | | | | | | | | | | | | <u> </u> | ,] |
| 30 | | | - | | | | | | | 廿 | | | · |
| 31 | | | ; | | | | | | | 1 | | | - |
| 32 | | | | | | | | | | | | | |
| 33 | | | · | | | + | | | | | | | |
| 34 | | | | | | | | ++ | | | | | |
| 35 | en t | | | | | | | | | + | | | |
| 36 | · . | | ; | | | | \parallel | | | - | | | |
| 37 | | | : | | | | | | - | | | | |
| 38 | | | | | | | | | | 井 | | | |
| 39 | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | |
| 41 | | | | | | | | | | | | | |
| 42 | | | | | | | | | | | - | | |
| 43 | | ; | | | | | | | | | | | |
| 44 | • | • | | | | | | | | | | | |
| 45 | A FORM-18A | | | | | - | | | + | | | | ٠. |

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| | LO | G.OF | BC | F | RIN | G | 4 | } | | | | | | | | SHEET 1 OF _ |
| | OJECT CABOT, CABOT | | | | | รบ | RFA | CE | ELE | VA" | TIO | N | T | _ | | OF BORING |
| (| C.C.&F. WESTERN DEVEL SHELL CHEMICAL PLA | | | IN | c. | | | 33 | .5 | 1 | | | - | | RTED | 8-14-72 8-14-72 |
| TY | PE & DESIGNATION OF DRILL | SAMPLES | | | | НА | MME | | | | | | | | | O WATER |
| | 18" Bucket Auger | Distu Undist | | | | | | | lb: | | 30' | 19 | | | 1 | None |
| DEPTH FROM SURFACE | | | ٦ | SAWPLE INTERVAL | PENETRATION RESISTANCE | | | | | | | | | | UNIT (T - PCF. | |
| ROES | CLASSIFICATION OF MA | TERIALS | SYMBOL | E | TRA | | | | | | | | | | DRY UNI WEIGHT-F | |
| E | (in feet) | | SYI | M | ENE | | Ph d | | TURE | CON | | Y %, | —— L | | ORY ElG | |
| 1 | | | <u></u> | 2 | م ه | | 1,0 | | 0 | 3,0 | | 0 | 5,0 | | | |
| | LOCATION: Refer to | |) . | | | | | | | | | | | | | |
| | LEAN CLAY: fine sand organic, silty, dark | | | | | \prod | + | | + | - | | - - | + | - | | moist |
| | & black (CL-OL) | | | | | - | + | H | + | - | | + | + | + | | |
| 2 | SANDY CLAY/CLAYEY SA | | 1 | | | \Box | 1 | | \bot | $oxed{\Box}$ | | \Box | T | I | | |
| 13 | fine sand, silty, librown (CL-SC) | .ght , | | | | - | +- | \vdash | + | + | Н | + | + | +- | | |
| | promit (cp ec) | | SS | 1 | | | 1 | | , | | | + | 土 | \perp | ,, | moist |
| 4 | | | 33 | 4 | | \prod | | | - 47 | | | | Ţ | L | 9. | . FMOISE |
| 5 | SILTY SAND: fine san | id, | { | | | ╂┼ | +- | \vdash | - | ┼ | - | + | ╁ | ╁ | l | 1 |
| | clayey, slightly mic | | | | | 口 | 工 | | | 工 | | | | | 1 | |
| 6 | light brown (SM-SC) | | j | | | - | +- | \vdash | | +- | | - | 4 | +- | l | |
| 7 | | | | | | \vdash | + | | + | 1 | Н | + | 十 | + | 1 | |
| | · | · |] | | | П | I | | \perp | \perp | | | Ţ | | | } |
| 8 | | | | | | ┞┼ | ╁ | \vdash | + | ╁ | H | | +- | ╁╴ | | |
| 9 | | | | | 3 | | | | | | | | 1 | 土 | } | moist |
| 10 | | | SPT | H | <u>6</u> 8 | - | - | -(| 14) | - | \vdash | - | ╀ | + | } | |
| | | | | Н | 8 | - | + | | | | | | T | 1 | İ | 1 |
| | | | | Ц | | | \top | | | \Box | | | Ţ | |] | |
| 12 | | | В | | | \vdash | + | | 14) | +- | Н | + | ╁ | +- | 1 | |
| t I | • | | <u> </u> | $\dagger \dagger$ | | | | | 1 | | | 士 | 士 | | 1 | |
| 13 | | | | | | \vdash | 1 | | 1 | + | \square | \perp | \bot | + | | |
| 14 | <i>;</i> | | | H | | \vdash | + | | + | 1 | H | + | + | 1 | | |
| ١٤ | | ı | SS | Ц | | | I | | 4 | | | I | Ţ | T | 1 116 | moist |
| 15 | | • | } | $\ \ $ | | - - | + | ╢ | + | + | Н | + | ╁ | +- | 1 | |
| 16 | • | | | | | 口 | | | 士 | | | 士 | 士 | | 1 | |
| - | | | | | | $oxed{\perp}$ | + | \Box | - | 1 | | | 1 | 4_ | | |
| 17 | | , | | | . : | - | + | $\vdash \vdash$ | + | +- | Н | + | + | +- | } | |
| 18 | | | | | | | | 口 | | | 口 | \perp | 工 | 1 | 1 | |
| 19 | | | | H | 5 | - | + | \vdash | + | ╁ | - | - | + | +- | 1 | |
| 13 | | * | SPT | H | 10 | - | a (! |)) | + | 1- | H | + | + | + | 1 | moist |
| 20 | ····· | | | П | 9 | 口 | | | | | | 工 | I | 1 | L | |
| e.O. & | A. FORM - 18 | | | | | | | | | | | | _ | OR | | vo4 |

BORING NO. 4 PLATE NO. 34

| | PROJECT | 100 | | | | N. C | | _ | | | | | | SI | HEET | |
|--------------------|--|--|------------|--------|--------------------------------|------------|--------------|-------|---|-------|---------------|-----------|-------------------------|------|------|---|
| | 7298 | LOG | UF | BC | | |) | 4 | | | <u> </u> | | , | 2 | OF : | 2 |
| DEPTH FROM SURFACE | | ATION OF MATERIA (in feet) | ALS | SYMBOL | SAMPLE INTERVAL PENETRATION | RESISTANCE | 1 | L 🌦 | | CONT. | TNT % | LL 5,0 | DRY UNIT WEIGHT-PCF. | | | |
| 20 | | | | | | | | | | | | | | | | |
| 22 | slightly s several fr pebbles (d greenish d | to medium sar silty, micaceou riable sand dry), trace of clay residue, | nd, is, | | | | | | | | | | | -moi | st | |
| | light brow | vn (Sw) | | | <u> </u> | - | | | | | | | | | | |
| 24 | | | | SS | - | - | | +- | - | ++ | | # | | | | |
| 26 | TOTAL | DEPTH 25.0' | | | | - | \prod | + | | H | H | 1. | - | | | |
| 27 | | | | | | F | \prod | - | | | | | | | - | |
| 28 | | | | | | F | H | - | | | H | | } | | | |
| 29 | | | | | | F | | | | - | H | | } | | | |
| 30 | ٠ | | | | | | \square | + | | - | \Box | | | | | |
| 31 | · | | | | | F | H | Ŧ | | | \prod | - | | | | |
| 32 | | | | | | | | | | | | |] | | • | |
| 33 | | | | | | | | | | | | | | | | |
| 34 | | | | | | | | | | | | | | | | |
| 35 | | | | | | | | + | | | | | | | | |
| 36 | | | | | | | | 1 | | | | 1 | | | | |
| 37 | | | | | | | | | - | - | $\frac{1}{1}$ | 士上 | | | | |
| 38 | | | | | | E | | 1 | | | | | | | | |
| 39 | • | | | | | L | | - | | | | + | · | | | |
| 40 | | | | | | F | | \pm | 土 | - | | + | | | | |
| 41 | | | | | | E | | 1 | | | $oxed{\Box}$ | | | | | |
| 42 | | | | | | | | + | - | | | 1 | | | | |
| 43 | • | | | | | L | | | | | | | | | | |
| 44 | • | • | | | | | | | | | | | | | | |
| 45 | | | | | | - | | + | | | | 1 | | | | |
| | 1 FORM - 184 | | | | | | - | | | | | BOR | ING N | | 31 | |

| | 1.00 | G OF | BC | RIN | IG | | | | | | | | | | SHEE | ۳* |
|--------------------|--|------------------|----------|---|-------------------------|------------|----------|----------|-----------------|-------------|---------|---------|-----------------|-------------------------|-------------|---------------|
| | | | | /1/11/ | | | | | | | | | | | <u>l</u> OF | |
| | OJECT CABOT, CABOT & C.C.&F. WESTERN DEVEL | | | INC. | SU | RFA | | | | TIO | N | - | | TED | OF BORIN | |
| ` | SHELL CHEMICAL PLA | | | | | | 36 | . 7 | • | | | - | | LETED | | |
| TY | PE & DESIGNATION OF DRILL | SAMPLES | | | | MME | | | | | | | _ | | WATER | |
| | 18" Bucket Auger | Distur Undist | | ed . | | 140 fal | | | | o " | | | | N | one | |
| DEPTH FROM SURFACE | CLASSIFICATION OF MAT (in feet) | TERIALS | SYMBOL | PENETRATION RESISTANCE | | | | TURE | - N/ | LT. | - | | | DRY UNIT WEIGHT-PCF. | | |
| ۴ | LOCATION: Refer to | Plate No | <u> </u> | 1941 | ⊥ | 1,0 | 2, | 0 | 310 | 4: | 0 . | 5.0 | | | [| |
| - | CLAYEY SAND: fine sa | | r | П | 77 | \neg | П | | Τ- | | | Т | П | | | |
| | few small pebbles, s | | | | H | + | | \top | +- | \vdash | 1 | +- | H | | -moist | |
| | organic, dark brown | | j | | | | | | I | | | | | | | |
| 2 | (SC-SM) | • | | | | | Ш | | 1_ | | \perp | \perp | Ц | | | |
| 3 | | | 1 | | 1-4 | | Н | | ╬ | \sqcup | | ╂— | \sqcup | | | |
| - | | | | 11 | - | + | \vdash | | ╫ | - | -+- | ╂─ | Н | | | |
| 4 | | | | | ╁┼ | +- | Н | | +- | + | | ╁╌ | $\vdash \vdash$ | | | |
| | color change to ligh | t brown | SS | 11 | | + | 1 • 1 | 18 |) - | | | 1 | \Box | 113 | -moist | to |
| 5 | | | | | | | | | I | | | | \square | | wet | |
| 6 | - | | | | 14 | - | Ш | | 4 | \sqcup | | 4_ | Ш | | [| |
| - <u>8</u> | CTIMU CAND. fine com | | | 11 | 1 | + | \vdash | + | +- | ╂╼┨ | | ╁ | ┦╌┨ | | moist | |
| 7 | SILTY SAND: fine san slight clay content, | | | | 1- | + | \vdash | - | + | - | | + | H | | | |
| | brown, several limon | | } | 11 | | + | | | + | | | 1 | П | | } | |
| 8 | stained zones (SM) | | | | | | | | I | | | | | | | |
| | | | ļ | ₩ | 44 | 4- | \sqcup | 1 | 4 | Ш | 4 | 1_ | \sqcup | | | |
| 9 | - | | SPT | 11 | ++ | - | | + | +- | - | + | +- | ┦╌┨ | | | |
| 10 | | | SPI | 16 | ++ | - [' | | 4 | + | \vdash | | + | \vdash | | | |
| | | | | | 11 | 1 | П | | + | | | | П | | | |
| | | | | } | | | | | | | | | | | | |
| | | | | | 14 | | 1 | | + | \sqcup | 4 | 1 | \sqcup | | | |
| 12 | | • | 1 | | - | | \vdash | - | ╀ | ╀┤ | - | ╂ | \vdash | | moist | to |
| 13 | SILTY SAND: fine san several pea sized fr | d, ishla | | | 1 | +- | \vdash | + | + | \vdash | | ╁╴ | \vdash | | wet | |
| | sand pebbles, micace | ONS. | | | 1 | + | Н | | 1 | 11 | | †- | \Box | | | |
| 14 | slight clay content, | | SS | | | | | 71 | -1 | | | | | 121 | ŀ | |
| إجبا | brown (SM) | - · y | | Ц | $\downarrow \downarrow$ | | \Box | 1 | 1 | П | | 4_ | \Box | | 1 | |
| 15 | | | | | - | + | ╀┤ | 1 | +- | \sqcup | | + | \sqcup | | 1 | |
| 16 | | | | 11 | - | +- | ╁┤ | \dashv | + | \vdash | | +- | H | | 1 | |
| H | | | | | + | +- | H | + | + | H | + | † | \vdash | | | |
| 17 | | | | | | | | | 工 | | | 上 | | | | |
| | | | • | | | | П | | | | | I | П | | | |
| 18 | CAMPA ACT BY COAST | | | | 1 | + | \sqcup | 1 | 4 | \sqcup | | 4- | Ц | | -wet | |
| 1 | SANDY/SILTY CLAY: fi several friable sand | | <u> </u> | | ╁┼ | | ╂╌┨ | + | +- | \vdash | + | + | \vdash | | | |
| ᆣ┦ | pebbles, micaceous, | | SPT | 1 8 | ++ | + | + | + | + | (13 (| 1 | + | H | | 1 | |
| 20 | brown (CL-ML) | | JPT | H 14 | ++ | + | H | + | +- | 屵 | + | + | Н | | 1 | |
| | A.FOR# - 18 | | <u> </u> | 11. | | | للن | | | لسل | | B(|)RI | NG N | 0. | _ |
| | | | | | | | | | | | | | _ | rf N | | 5 |

| | PROJECT 7298 | LOG | OF. | В | D R | RIN | G | | 5 | | | | . | | | | | | HEE OF | |
|--------------------|-------------------------------------|--|----------|--------|-----------------|---------------------------|---|-------------|----------|-----------|---|--------------|----------|------|---------------|-----|------------------------|------|-----------|---|
| DEPTH FROM SURFACE | ! | ATION OF MATER (in feet) | RIALS | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | PL | _ | I ISTU | - | CON NAT. | | 7 %, | , L 5,0 | | DRY UNIT WEIGHT CF. | · | | |
| 45 46 | extremely | S SHELL BED: dense, sand | , | | Π | | | 7 | | | | | 7 | T | F | | | -moi | st | |
| 47 48 | SANDY/SII sand, lim | t matrix, iro tan (Coquina) TY CLAY: fine conite, shell | <u>)</u> | | | | | # | | | | | | | | | | | | |
| 49 50 | brown (CI SAND: fir ceous, br | ie, silty, mic rown | | | | | | | | | | | | | | | | -moi | .st | |
| | TOTAL | DEPTH 50.0' | | | | | | | | | | | | 1 | + | - | | · | | |
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| R.O.8 | A. FORM - 16 | | | | Ш. | | 1 | | 1 | | | | | _!_ | 1_ | ! ! | l | | | |

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|--------------------|---|------------------|-------------|-------------------|---------------------------|---------------------|----------|----------|----------|---------------------|----------|----------------|--------|----------------|--------------|-------------------|-------------------------------|-----------|
| | LOG | OF | BC | F | RIN | G | 6 | 3 | | | | | | | | | SHEET <u>i</u> of <u>2</u> | |
| | OJECT CABOT, CABOT & | | | _ | | SUI | RFA | CE | Εl | E | VAT | 101 | i | T | | DATE | OF BORING | \exists |
| 1 | C.C.&F. WESTERN DEVELO SHELL CHEMICAL PLAN | | | ĺΝ | c. | | | 36 | 5. | ' | | | | _ | | RTED | 8-15-72 8-15-72 | |
| TY | | SAMPLES | NII. | | | HA | MMI | ER | | | | | | | | | O WATER | - |
| | 18" Bucket Auger | Distur Undist | | | | | 14 fa | 10 11 | | | | n | | | | 1 | None | ļ |
| T T | | Undist | | 1] | | | | <u></u> | | | | <u> </u> | | | | IP. | | 一 |
| SUR | | | 70 | TERV | ATIO | | _ | | ۰ | | | | | 4_ | | UNIT IT - PCF. | | į |
| 9 | CLASSIFICATION OF MAT | ERIALS | SYMBOL | Ī | ETR IST/ | | | • | | | | | | 1 | | Y U | } | 1 |
| DEPTH FROM SURFACE | (in feet) | | SΥ | SAMPLE INTERVAL | PENETRATION RESISTANCE | | PL 4 | ۰ | _ | | HAT | | # LL | • | | ORY WEIGH | | 1 |
| ٩ | LOCATION: Refer to I | Plate No | L | 121 | | | 1,0 | - 2 | 10 | 3, | 0 | 4,0 | | 810 | | | <u> </u> | ㅓ |
| - | GRASS SOD | | • | 77 | | | Т | | | | -1 | - - | _ | Т | | | 1 | { |
| | LEAN CLAY: fine to m | | | | | | | | | | | 士 | 土 | 上 | | | moist | i I |
| 10 | sand, {organics, silty brown (CL-OL) | , dark | | П | | - | + | \vdash | | | | 4 | - | + | \vdash | | | ł |
| L | DIOMI (CT-OT) | | | | | - | \perp | †- | H | \dashv | + | _† | 士 | \dagger | | | | |
| 3 | | | | | | | F | | | · | \Box | \Box | T | I | $oxed{\Box}$ | | • . | ļ |
| 4 | | | | H | | - | ╫ | | | | \dashv | ╁ | + | + | \vdash | , , , | | |
| 5 | | | SS | \perp | | I | 1 | | 1 | | 二 | 7 | 1 | I | | 113 | -moist to | ı |
| 3 | CLAYEY SAND: fine to | medium | | | | - | ╁ | - | \vdash | | | + | ╫ | ╀ | - | | | |
| 6 | sand, silty, color ch | | | | | | 上 | | | | | 丁 | | 工 | | | | |
| 7 | to brown (SC-SM) | | | | | $\vdash \vdash$ | ╀ | - | | | \dashv | + | + | ╂- | ┼- | | ţ | |
| | • | | | | | | 上 | | | | | | 士 | 土 | | | • | - 1 |
| 8 | | | | | | | + | - | | | | + | + | ╀ | \vdash | | | |
| 9 | • | · | | Ш | 4 | | 士 | | | | | 1 | \pm | 土 | | | -moist to | |
| <u></u> | | | SPT | Н | 6 | | | 0 | 0 | . 7 | 2 | _ | \bot | L | | | wet | İ |
| | | | | Н | 8 | \vdash | ╁ | - | | | + | \dashv | + | 十 | +- | | 1 | |
| | | | | $\ $ | | | I | | | | | 耳 | | I | | | | į |
| 12 | SILTY SAND: fine sand micaceous, slight cla | | | $\ \ $ | | $\vdash \vdash$ | ╀ | - | \vdash | \vdash | - | \dashv | + | + | + | | | |
| | content, light brown | (SM) | | | | 二 | 上 | | | | | 1 | 土 | 上 | | | | |
| 13 | | | | | | $\vdash \downarrow$ | + | - | | \vdash | | + | + | + | + | | | |
| 14 | | | SS | $\dagger \dagger$ | | | 上 | /, | 2 | | | 士 | 土 | 上 | 上 | ļ,,, | moist | |
| 15 | | | 23 | | | $\vdash \vdash$ | + | 1 1 | | | | 4 | + | + | +- | 1110 | MOTSE | • |
| | ٠ | | | | | _ | + | | H | | | + | + | + | \pm | | | |
| 16 | , | | | | | | I | | | | | 1 | 1 | T | \Box | } | | |
| 17 | SANDY CLAY: silty, micaceous, light brow | , m | | | | ┝┼ | + | - | \vdash | Н | | \dashv | + | + | +- | | | |
| | (CL) | A11 | | | | | 工 | | | | | 二 | 工 | 1 | | 1 | | |
| 18 | · | | | H | . 4 | | + | - | H | $\vdash \downarrow$ | | 4 | + | + | - | | | |
| 19 | : | | SPT | H | 5 | | \pm | | | | | 士 | 士 | \bot | | | | |
| | • | | | П | 10 | | T | \Box | | П | \Box | \bot | \bot | I | $oxed{\Box}$ | | | |
| 20 | A. FORM - 15 | | | Ц | | | 1 | L | | Ш | | | | I _B | OR | NG I | 1 | |

BORING NO. 6 PLATE NO. 36

| | PROJECT 7298 | LOG | OF | ВС |) F | RIN | G | | 6 | | | | | - | | | | HEET OF | |
|--------------------|-------------------------------------|---|--------|--------|-----------------|---------------------------|---|---------------|---------------|-------|-----|--------|------|-----------------|----|-------------------------|------|------------|---|
| DEPTH FROM SURFACE | | ATION OF MATER (in feet) | IALS | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | P (, | _ | S TUP | -0. | ONTE | NT 9 | ٠ اړړ 5,0 | | DRY UNIT WEIGHT-PCF. | | - | |
| 20 | | | | | | | | | | | | | | | | | | | |
| Ш | numerous s friable, f | <pre>/: (continued) sand pebbles, from pea size</pre> | | | | • | | | | | | | | | | | -moi | st | |
| 23 | 1/2", ligh | nt brown (CL) | | - | | | | | - | | | | | | | | | | |
| 1 1 | CLAYEY SAN silty, mid (SC-SM) | ND: fine to me | edium, | В | | | | e(| 9) | | + | + | | | | | -moi | st | |
| 26 | | DEPTH 25.0' | | | + | | | # | - | | # | ‡ | | | | | | | |
| 27 | | | | | | | | + | - | | + | + | | | +- | | | | |
| 28 | | | | | | | | | | | - | 1 | | | | | | | |
| 29 30 | | | | | | | | | | | | 1 | | | | | | | |
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| 33 34 | | | | | | | | | | | + | + | | | | | | | |
| 35 | | | | | | | - | + | | | | | | 1 | | | | | |
| 36 | | | | | | | - | | | | | İ | | | | | | | |
| 37 38 | | | | | | | | + | | | # | + | | + | | : ! | | | |
| 39 | | | | - | | | - | 1 | | | | 1 | | - | | | | | |
| 40 | | | | | | | | + | | | 1 | ! ! | | | | | | | |
| 41 | | | | | | | - | - | | | + | 1 | | - | | | | | |
| 43 | | | | | | | 1 | 1 | | | 1 | | | | | | | | |
| 44 | | : | | | | | † | | | | + | | | + | | | | | |
| 45 E.O. | L, FORM - 184 | | | | Ш | | 1 | 1 | | | 1 | | | | | NG N | | · 6 | |

| | pro. | | | | | | | | | , | | | | | | | | |
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| | LO | G OF | ВС | F | RIN | G | | 7 | | | | | | | | | SHE 6 1 OF | _ |
| | OJECT CABOT, CABOT | | | | | SL | RF | ACI | E E | LΕ | VΑ | TIO | N | | | | OF BORIN | |
| 1 | C.C.&F. WESTERN DEVEI SHELL CHEMICAL PLA | | | IN | C. | | | 3 | 12. | . 3 | t | | | | | | 8-18- | |
| TY | PE & DESIGNATION OF DRILL | SAMPLES | ERTY | | | HZ | MA | 4ER | | • | | | | | | | 8-18- 0 WATER | 14 |
| | 18" Bucket Auger | Distu | bed | / | | | | 40 | | lb. | S | | | - 1 | | | None | |
| <u></u> | 20 20000 110901 | Undis | turb | ed | | | f | al | 1: | in | g : | 30 | 11 | | | | | |
| DEPTH FROM SURFACE | CLASSIFICATION OF MAT (in feet) | TERIALS " | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | PL | . 🚣 | ; ; ; ; ; ; | _ | ● NA | ITEN | -€ i | L 5,0 | | DRY UNIT WEIGHT-PCF. | | |
| | LOCATION: Refer to | Plate No | | ; | | | -119 | <u></u> | -10 | • | 10 | | <u> </u> | -10 | | L | L | |
| | SAND/GRAVEL FILL: lo | ose | | П | | | I | | I | | | | | \perp | I | . | | |
| 1 | OF NURY COMM 222 | El. | | | | \sqcup | 1 | 4 | 1 | 1 | - | | Ц | 1 | | | -moist | |
| 2 | CLAYEY SAND: silty, medium sand, dark br | ine to | | | | $\vdash \vdash$ | + | + | + | +- | - | $\vdash \vdash$ | + | + | +- | 1 | | |
| | (SC-SM) | O 111 | | | | $ \cdot $ | + | + | + | + | \vdash | H | + | 十 | + | 1 | | |
| 3 | | 4 | | | | | | | I | I | | | | I | | 1 | | |
| 4 | color change to brow | 'n | | $\perp \mid$ | | | 4 | | \perp | 1 | <u> </u> | | | 4 | \bot | ļ | | · |
| - | | ! | SS | | | \vdash | + | (1 | () | + | ╄ | \vdash | - | + | + | 131 | -moist | |
| 5 | SILTY SAND: fine san | d, | | 11 | | H | + | 十 | + | +- | 十 | Н | - | \dagger | - | Ì | | |
| | micaceous, brown, va | riable | | | | | | | I | | | | | 1 | | 1 | | İ |
| 6 | clay content (SM-SC) | | | | | \sqcup | 4 | 4 | 4 | \perp | ↓_ | | | 4 | _ | ļ | | |
| 7 | | | | | | | + | + | ╀ | +- | ┿ | H | + | + | +- | ł | | |
| | | - | | | | H | + | + | \dagger | \dagger | 十 | \vdash | + | + | ╁ | | | |
| В | | | | | | | | | I | I | | | | 1 | 上 | 1 | } | |
| | | | | Ц | | | 1 | 1 | \perp | L | L | | | 1 | \perp | | | |
| 9 | - | | SPT | Н | 6 13 | \vdash | + | • (|] _ | + | ╁╌ | | - | + | | ł | -moist | |
| 10 | | | SFI | H | 17 | | + | ╬ | +3 | + | ╁ | H | + | + | ╁╴ | ł | | |
| | | | | $\dagger \dagger$ | | | 1 | | | İ | | | | 1 | 上 | 1 | | |
| 11 | | | | $\ \ $ | | | \perp | 工 | I | I | | | | \bot | | | • | |
| 닖 | | | | $\ \ $ | | \vdash | + | + | + | + | - | $\vdash \vdash$ | - | + | +- | 1 | | |
| 쁜 | color change to tan | | | $\ \ $ | | \vdash | + | + | + | + | 十 | H | + | + | + | | | |
| 13 | | | | | | | _ | _ | <u> </u> | | 士 | | | 1 | 士 | 1 | | |
| | | | | Ц | | | \perp | T | T | I | L | | \Box | I | \perp |] | | |
| 14 | | | SS | | | 4 | + | 7 | + | + | 1 | H | + | + | +- | 1 | -moist | to |
| 15 | SILTY/CLAYEY SAND: f | | | ╁┨ | | Н | + | + | ╁ | + | + | | -+ | + | +- | 1 | dry | |
| | <pre>sand, limonite, mica tan (SM-SC)</pre> | ceous, | | $\ \ $ | | \vdash | _ | + | 十 | <u> </u> | T | H | _ | _ | | 1 | | |
| 16 | Cu. (D., 00) | | | | | | I | | I | I | L | \square | | Ţ | I |] | | |
| | | | | | | Ц | 4 | + | + | +- | - | \sqcup | \dashv | + | | 1 | | |
| 17 | | j | | | | + | + | + | + | + | + | ┤┤ | + | + | + | 1 | | |
| 18 | | | | | | \dashv | \dagger | + | + | + | + | H | + | + | + | 1 | } | |
| | SANDY/CLAYEY SILT: V | | | Ц | | | 1 | | 丰 | 工 | 匚 | | | 1 | | 1 | | • |
| 19 | fine sand, micaceous | | | Н | 5 | J | 1 | | 1 | 1 | | | _[| 1 | + | 1 | moist | to |
| 20 | <pre>limonite-staining, t (ML-CL)</pre> | an | SPT | H | 8 | - | 4 | + | + | 70 | 4 | $\vdash \vdash$ | + | + | + | 1 | wet | |
| | A.FORE-16 | | | L | ٥ | | | | | | <u> </u> | 11 | | ۲, | 100 | ING N | 7 | |
| | | | | | | | | | | | | | | | JUR | ING N | · · · · · · · · · · · · · · · · · · · | |

BORING NO. 7 PLATE NO. 37

| | PROJECT 7298 | LOG | OF | ВС |)F | RIN | G | - | 7 | | - | | , | | ···· | SH <u>2</u> | EE OF | |
|--------------------|-----------------|-----------------------------|-------------|----------|-------------------|---------------------------|---------------|-------------|----------------|-------------|--|---------------|----------------|-----|-------------------------|----------------|----------|----|
| DEPTH FROM SURFACE | | ATION OF MATER (in feet) | IALS | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | PL 4 | | | CON- | | - ■ L L | 1 | DRY UNIT WEIGHT-PCF. | | | ٠ |
| 20 | | | | | 11 | | | | , _Y | | | | | 1 1 | | | | |
| 21 | fine sand, | YEY SILT: very micaceous, | | | | | | + | | 1 | | \downarrow | \downarrow | | 1 | -mois | | to |
| 22 | limonite-s | staining (ML-C | L) | | | | - | + | | \pm | ++ | + | ‡ | | - | | • | |
| 23 | | • | | | | | | + | | | | 1 | + | | 1 | | | |
| 24 | numerous d | lark brown sil | ty | <u> </u> | $\dagger \dagger$ | | + | 丰 | | 1 | 1 | 1 | ‡ | | 1 | | | • |
| 25 | | , moist to dr | У | В | | | | 士 | | | | 1 | 1 | | | <u> </u> | | |
| 26 | TOTAL | DEPTH 25.0' | | | | | 1 | + | | _ | +- | # | + | | 1 | | | |
| 27 | | | | | | | $\frac{1}{1}$ | # | | + | | 1 | + | | 1 | | • | |
| 28 | | | į | <u> </u> | | | + | | | _ | | 1 | + | | 1 | | | |
| 29 | | | ** | | | | 1 | \pm | | 1 | + | 1 | \pm | | 1 | | • | |
| 30 | | | | | | | 1 | | | _ | ╁┼ | 1 | \perp | | 1 | | | |
| 31 | | | | | | | 1 | | • | | | 1 | 1 | | 1 | | | • |
| 32 | | | , | | $\ $ | | 1 | 1 | | <u> </u> | | 1 | + | | 1 | | | |
| 33 | | | | | | j | + | | | | | \pm | _ | | 1 | | • | |
| 34 | | | | | | | _ | | | \pm | + † | \pm | 1 | | - | | | |
| 35 | | | | | | | _ | | | \perp | | \pm | \pm | | 1 | | • | |
| 36 | | | | | | | + | \perp | | | | \pm | 土 | | | | | |
| 36 37 | | | | | | | | | | + | | -}- | 1 | | - | | | |
| 38 | | | | | | } | | | | | | \pm | 士 | | | | | |
| 39 | | | | | | } | + | | \perp | 1 | | \pm | \pm | | - | | | |
| 40 | | | | | | į | | | \pm | | - | + | 1 | | <u> </u> | | | |
| 41 | | | | | | [| + | | - | | | \pm | - | | 1 | | | |
| 42 | | | | • | | - | \pm | | \pm | \pm | | + | | | | | | |
| 43 | | : | ļ | | | | $\frac{1}{1}$ | | \pm | 1 | | \pm | - | | 1 | | | |
| 44 | ; | • | | | | | + | | \int | | | $\frac{1}{1}$ | + | | 1 | | | |
| 45 | | | | | | | | | \bot | - | 1 | \mp | + | + | - | | | |

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| | LO | G OF | BC |) F | RIN | G | 8 | | | | | | | | SHEET 1 OF <u>3</u> |
| PF | OJECT CABOT, CABOT & | FORBES | | | | รบ | RFA | CE | EL | EVA' | TION | 1 | L | | OF BORING |
| | C.C.&F. WESTERN DEVEL SHELL CHEMICAL PLA | | | | ic. | | | 30 | .3 | 1 | | | _ | MPLETE | |
| TY | | SAMPLES | | | | НА | MME | | | | - | | _ | | O WATER |
| | 18" Bucket Auger | Distur Undist | | | | | | | lb in | s g : | 3 O " | | | 1 | None |
| TACE. | | | | Ę | Z W | | | | | | | | ٠ | u. | |
| SUR | | i | 0 [| F. R. | ATIC | | | | | | | | | UNIT T-PCF. | |
| P P | CLASSIFICATION OF MAT (in feet) | TERIALS | SYMBOL | 1 | ETR IST/ | | · | | | | | | |]×F | |
| DEPTH FROM SURFACE | (111 1660) | | SY | SAMPLE INTERVAL | PENETRATION RESISTANCE | | PLA | | | COM | . | - | | DRY U | |
| ۴ | LOCATION: Refer to | Plate No | · | 1- | | L | 1,0 | 2. | <u> </u> | 3,0 | •10 | 8 | 10 | | |
| - | SAND GRAVEL: fill ma | | | Т | | П | T | П | T | 7 | П | T | П | 1 | 7 |
| | reddish brown | | | | | \Box | | | 1 | | | | П | 7 | -moist |
| 2 | SANDY CLAY: silty, d brown organic matter | ark (black) | | ╀ | 10 | | +- | $\left \cdot \right $ | + | ╁ | ┨═┨ | + | $\left\{ \cdot \right\}$ | - | |
| I | (CL-OL) | (DIACK) | SPI | ŀĽ | 10 | | 上 | | 士 | 上 | | | |] | -moist |
| 3 | | | | - - | 14_ | \vdash | ╁- | \square | + | +- | \sqcup | - | | - | |
| 4 | | ! | | | | H | +- | \vdash | + | + | H | + | - | - | |
| | CLAYEY SAND: silty, | fine to | | | | | 工 | | | 1 | | 土 | | コ | |
| ᅡᅩ | medium sand, reddish (SC-SM) | brown | | l | | \vdash | | | + | ╁ | \vdash | + | \vdash | | |
| 6 | (30-311) | | | | | | | | + | | | - | | _ | |
| 7 | | | | | | 口 | I | | \Box | T | | 1 | П | 7 | |
| | • | | | | | \vdash | | H | + | +- | | +- | \vdash | - | |
| 8 | SILTY SAND: clayey, | fine to | | | | | | | 土 | 土 | | 士 | |] | -moist |
| 9 | medium sand, reddish | brown | SS | | | $\vdash \vdash$ | + (| 14 | 4 | +- | | - | \vdash | -127 | |
| | changing to brown, slightly micaceous (| SC~SM) | | + | | | +- | | + | +- | - | + | H | - | |
| 10 | | | | | | \Box | | | 1 | | | | П | 7 | |
| 1 | | • | | | | \vdash | +- | $\left \cdot \right $ | \dashv | + | H | ╁ | \vdash | - | |
| | ; | | | | | | | | 二 | 1 | | | | コ | |
| 12 | • | | | | | \vdash | - | - | + | - - | - | - | \vdash | | |
| 13 | | | | | | \vdash | +- | | + | + | - | + | \vdash | - | |
| 14 | | | | 1 | | | I | | \bot | I | | \bot | П | 7 | |
| - | • | | SPT | ŀ | 6 | $\vdash \vdash$ | +- | 7 | _ | ╁╴ | $\vdash \vdash$ | +- | \vdash | - | |
| 15 | | | | | 12 | | | | 1 | | | 上 | | | moist |
| 16 | | • | | | | - | + | \vdash | + | + | \prod | | $\vdash \vdash$ | - | |
| ٣ | | | | | | | + | H | + | + | H | + | | - | |
| 17 | | | - | | | | I | П | 1 | 工 | \square | 工 | | 7 | |
| 18 | | | | | | | +- | | + | + | - | + | - | - | |
| | SAND: silty, light by | | | + | | | | | | | | | | ٦, , , , | 1 . |
| 19 | slightly gaseous odor | (SW) | SS | | | | | | -1 | I | П | \perp | П | 7109 | -moist |
| 20 | SILTY/CLAYEY SAND: F: micaceous, brown (SM- | ne, -SCl | | | | $\vdash \vdash$ | + | H | + | +- | H | + | $\vdash \vdash$ | - | - |
| | A.708#-16 | | | لل | | <u> </u> | -1 | ٠١ | | | 11 | | BO | RING 1 | |
| | | | | | | | | | | | | | PL | ATE ! | vo. <u>38</u> |

| | PROJECT 7298 | LOG OF | ВС | DRIN | 1G | 8 | | | | | | SHEET 2 OF <u>3</u> | |
|--------------------|--------------------------|---|--------|--|-------------|-----------------|---------------------|------------------|---------|--------------|-------------------------|---|---|
| DEPTH FROM SURFACE | | ATION OF MATERIALS (in feet) | SYMBOL | SAMPLE INTERVAL PENETRATION RESISTANCE | | 1 M(PL & | 1 DISTURE 2.0 | CONT NAT. | ENT % | | DRY UNIT WEIGHT-PCF. | | • |
| 20 | | | , | | | | | | | | · | , · · · · · · · · · · · · · · · · · · · | |
| 21 | SILTY/CLAY (continued | | - | | | | | ++ | 1 | | | | |
| 22 | SILTY SANI | o: fine to medium aceous, slight gas | | | | | | | + | | | -moist | |
| 24 | odor, limo | onite, variable It content, brown | | | # | | | | | | | | |
| 25 26 | (SM) | | | | | | | | | | | | |
| 27 | fine to me | ry, micaceous, edium sand, very variable in zones) | | | | | | | | | | | |
| 28 29 | (SW) | variable in zones) | SPT | 6 | | (6) | | | ++ | | | -moist to | 0 |
| 30 | , | | 51 1 | 18 | | | | | 1 | | | dry | |
| 31 | | | · | | | | | | | | | | |
| 33 | SILTY/CLAY medium san | YEY SAND: fine to | | | | | ++ | | | | | -moist | |
| 34 | limonite, | brown (SM-SC) | SS | | | | (16) | | +- | | 113 | | |
| 35 36 | | | | | | | | | | | | | |
| 37 | | | | | | | | | | | | | |
| 38 39 | | | | | | - | | $\frac{1}{1}$ | | | | -moist | |
| | sand, mica | /SHELL BED: fine aceous, limonite sell fragments(SM)/ | В | | | | () | | | | | -moist to | , |
| 41 | SILTY SAND ceous, hea | e: fine, mica- | Б | | | | \ | | | | | wet | |
| 43 | stainir.g, | : DIOMU (SW) | | | | | | | | | | | |
| 44 | | · | | | + | | | | | | | ٠. | |

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| | PROJECT 7298 | LOG (| OF | BC | RIN | G | { | 3 | | | | | | | · · · · · · · · · · · · · · · · · · · | SHEET 3 OF 3 |
|--------------------|-----------------|--|-----|--------|--|--|-------|----------|----------|----|---------------|----------------|----------|----------|---------------------------------------|---------------------------------------|
| IFACE | 1258 | | | | | | | | | | | | | | CF. | 2 0. 2 |
| DEPTH FROM SURFACE | | ATION OF MATERIA in feet) | \LS | SYMBOL | SAMPLE INTERVAL PENETRATION RESISTANCE | | P L | <u> </u> | \$ T U# | | ONT (| EN 7 . | | 0 | DRY UNIT WEIGHT-PCF. | |
| 45 | | | | | | | | , | r | | · | 7 | | | | · · · · · · · · · · · · · · · · · · · |
| 46 | to medium | SANDY SILT: f | ine | | | | + | +- | | 1 | + | | | + | 1 | -moist to |
| | limonite s | odorous, heavy staining, vari- cay-green-brown | .] | SS | | | 1. | | (1 | 9) | 1 | | | | 100 | wet . |
| 48 | (SM-ML) | .u, yzden zzem | | | | | \pm | - | | 1 | + | - | | - | | |
| 49 50 | | • | | | | | + | - | | + | <u> </u> | + | | + | - | |
| 51 | | | | | | | | E | | - | - | | | 1 | 1 | |
| 52 | · | | | | | | + | - | | + | + | - | | | 1 | |
| 53 | | | | | | | | | | | <u> </u> | E | | | | |
| 54 | SAND: silt | y, fine to | | | | | + | - | | + | + | + | | + | 1 | moist to wet |
| | heavy odor | caceous, limon | Y | | | | | | | | | | | | | |
| 57 | shell frag | | | | | | | - | - | ‡ | $\frac{1}{1}$ | + | | | | dry to |
| | micaceous, | y, odorous, limonite stai sand, brown (C | .n- | | | | - | | | 1 | + | | | | 1 | moist |
| 59 | | , , , , , , , | | | | | + | | 1 | 1 | + | - | | \pm | - | |
| 60 | TOTAL | DEPTH 60.0' | | | | | | | | 1 | <u> </u> | | | <u> </u> | - | |
| | | | | | | | 1 | | | 1 | | | | | | |
| | | | | | | | + | | | + | + | \vdash | | + | 1 | |
| | - | • | | | | | 1 | | | | 1 | | | 1 | | |
| | | | | | | - | + | | | + | | - | | + | | |
| | | | | | | | | | | + | | - | | <u></u> |] | |
| | | | | | | - | | | 1 | 1 | - | | | 1 | | |
| | | | | | | ‡ | + | | + | + | + | - | | + | 1 | |
| | | 7 | | | | - | 十 | ╎ | \dashv | + | i | | \vdash | + | 1 | |

E.O.S A. FORM - 16

| | LOG OF | ВС |) F | RIN | G | | Э | | | | | | | | | SHEET |
|------------------|---|----------|----------------|--|--|--------------|-----------------|-----------|------------|--------------|------------------------|----------------------|---------|----------|-------------|----------------------|
| | ROJECT CABOT, CABOT & FORBES C.C.&F. WESTERN DEVELOPMENT (| | IN | ic. | SUF | RFA | • | | | ATIC | N | | ST | DA | _ | OF BORING 8-18-72 |
| | SHELL CHEMICAL PLANT PROP | | | | | | 26 | 5.3 | ! <u>'</u> | | | | СО | MPLE | TED | 8-18-72 |
| TY | PE & DESIGNATION OF DRILL SAMPLES Distur | h d a 1 | | | , | 4ME | | 1 | | - | | | DE | PT | 4 T(| WATER |
| | 18" Bucket Auger Undist | | | | 1 | fal | | | | 30" | | | | | 1 | None |
| SURFACE | | ر | AVAL | PENETRATION RESISTANCE | | | | | | | | | | _ | PCF. | |
| 30 | CLASSIFICATION OF MATERIALS | SYMBOL | SAMPLE INTERVA | TAN | | | | | | | | ^ | | UNIT | WEIGHT - F | |
| DEPTH FROM | (in feet) | M ≻s | PLE | SIS | | | | TURI | | NTE | T % | | | Ⅎ⋩ | 1913 | |
| 8 | | <u>"</u> | 3 | A BR | Ĺ | PL 4 | | 0 | 3.0 | AT. | 10 | . L <u>- 61</u> 0 | | <u> </u> | ₹ | |
| | LOCATION: Refer to Plate No | | | | | | | | | | | | | | | |
| - | SURFACE GRAVEL: loose | | $\ \ $ | | - | - | Ц | + | 4 | | \sqcup | 4 | 4 | - | | |
| + | SANDY CLAY: fine sand, dark brown | 1 | | | $\vdash \vdash$ | +- | \vdash | + | + | + | H | \dashv | + | -{ | | -moist |
| 2 | SANDY CLAY: color change to | | | | | | | | 士 | | | I | \pm | | | |
| 3 | brown (CL) | | | | | \perp | | \bot | \perp | \perp | | \perp | \bot | 4 | | |
| 13 | | | | | | +- | \vdash | + | + | | ╁┼ | + | + | - | | • |
| 4 | | ss | \dagger | | | | | عرد | | 1 | | 1 | | Ⅎ、 | ۸۵ | -moist |
| 5 | | - | \sqcup | | | | | | 7 | \bot | П | 4 | |]∸ | 08 | · |
| - | · | | | | ┝┿╌ | + | \vdash | + | ╁ | +- | ╂╌┼ | + | + | \dashv | | |
| 6 | | | | | | | | | | | | | | 1 | | |
| 7 | CLAYEY SAND: silty, mica- | | | | $\vdash \downarrow$ | 1- | Н | \dashv | 4 | _ | | 4 | 4 | 4 | | |
| ' - | ceous, fine grained, brown (SC-SM) | | | | \vdash | +- | | + | \dashv | ╁ | ╂┼ | + | + | ┪ | | |
| 8 | (SC SH) | | | | | | | 士 | | 工 | | | |] | | · |
| 9 | CTT MY COURS Fire 1 | SPT | H | 6 | - | | 7 4 | \dashv | + | | $\left \cdot \right $ | \dashv | + | - | | -moist |
| | SILTY SAND: fine sand, micaceous, minor clay | SPT | H | 12 13 | \vdash | - | + | 7 | + | + | H | + | + | ┪. | | -moist |
| 10 | content, brown (SM) | | | | | | | \Box | \perp | | \Box | \Box | 1 |] | | |
| 11 | | | | | | ╀ | \dashv | + | + | + | H | ╅ | + | - | | |
| | | | П | | 口 | 二 | | | \perp | | | ゴ | \perp | コ | | |
| 12 | | | $\ \ $ | | \vdash | 1 | $\vdash \dashv$ | | + | +- | - | + | + | 4 | | |
| 13 | slight gaseous odor | | | | - | +- | H | \dashv | + | + | H | 十 | + | \dashv | | |
| | *** | SS | П | | | •1 | 11 | , | 1 | | П | 二 | 1 | | | -moist |
| 14 | | | H | | - | + | \square | - | + | + | \vdash | + | + | - | | |
| 15 | | | | | | | | + | + | + | H | + | + | 7 | | |
| | SAND: silty, fine to medium, | | | | | \Box | | 1 | 1 | T | | 1 | 丁 | | | |
| 16 | micaceous, light tan (SW) | | | | ┝┼ | + | | + | + | + | | + | + | \dashv | | |
| 17 | CLAYEY SAND: fine to medium micaceous, limonite, brown | | П | ' | ┝┿ | +- | $\mid - \mid$ | + | + | ╁ | ╂┤ | + | + | - | | |
| | (SC) | | $\ \ $ | | | | | 丁 | 1 | | | 工 | 丁 | | | |
| 18 | SANDY SILT: clayey, fine to | | H | - - - - | | \perp | | $-\Gamma$ | \perp | \perp | \prod | 1 | $-\int$ | 4 | | |
| 19 | medium sand, micaceous, (gas) odorous, greenish | SPT | H | 7 | + | +- | \vdash | + | + | + | | + | + | - | | -moist |
| | brown (ML-CL) | | H | 10 | | | | | | T | | _ | _ | _ | | MOISC |
| | color change to green | | \prod | | Ш | | | | I | I | | 工 | | 1 | | |
| R C. B | A. FORM - 16 | | | | | | | | | | | | ROF | RING | . N | ი 9 |

| | PROJECT 7298 | LOG | OF | ВС | DRIN | G | | 9 | | | | | | | SHEET 2 OF | |
|--------------------|----------------------------------|--------------------------------|----------------|--------------|--|-------------|---------|----------|----------------|-------|-------|------------------|------------------|-------------------------|---------------|---|
| OEPTH FROM SURFACE | | ATION OF MATER in feet) | RIALS | SYMBOL | SAMPLE INTERVAL PENETRATION RESISTANCE | | PL. | <u> </u> | TURE 0 | ● NAT | | ₩ L L | ,0 | DRY UNIT WEIGHT-PCF. | | |
| 20 | | | | , | | | | ···· | | | | -, | , , , | | , · | |
| 21 | sand, mic | T: fine to me aceous, limon | ite | | | | + | | \pm | | 1 | \perp | | | -moist | |
| 22 | stains, he greenish | eavy gas odor brown (ML-CL) | Ca. | | | | 士 | | \pm | | \pm | \perp | | | | |
| 23 | | | | | | | \perp | | | | - | 1 | | | | |
| 24 | sand, clay | D: fine to me yey, micaceou | dium s, | | | | | | | | 1 | \perp | | | | |
| 1 1 | limonite, <u>areenish k</u> | gas odor, prown (SM-SC) | | | | | | | _ | | | + | | | -moist | |
| 1 1 | SAND: fine | e to medium, | tan | | | | | | \perp | | \pm | \perp | | | | |
| 27 | | DEPTH 25.0' | | | | | | | 1 | | \pm | | | | | |
| 28 | | | | | | + | + | | + | | - | | | | | |
| 29 | | • | | | | \Box | | H | + | | | +- | | | | |
| 30 | | | 7. 32 (1.32 | | | | \top | \prod | - | | - | Ī | | | | |
| 31 | | | , 200 ± 1 2 | | | | - | | - | H | - | | | | | |
| 32 | | | | | | | | | | | - | L | | | | • |
| 33 | | , | | | | | + | H | - | | - | | | | | |
| 34 | • | | | | | + | + | | - | | - | - | | | | |
| 35 | | | | | | | - | | | | - | | | | | • |
| 36 | | | | | | | - | \Box | \mp | | - | | | | , | |
| 37 | | | | | | | - | | - | | | | | | | [|
| 38 | | | | | | | \mp | | | | \mp | | | | | |
| 39 | | | , | | | | + | | - | | 1 | \Box | | | | |
| 40 | | | | | | + | 1 | | 1 | 1 | 丰 | | | | | |
| 41 | | | | | | # | + | | 丰 | | 1 | \Box | | | | |
| 42 | ٠ | | | | | + | - | | -i- | | 1 | - | | | | |
| 43 | | | | | | + | | | ‡ | | + | $ \cdot $ | | | | |
| 44 | | ; | j | | | + | | | + | | 丰 | | | | | } |
| 45 | | | | | | + | | | # | | + | + | + | | ٠, | |

| Γ | LO | G OF | BC | F | RIN | G | 10 | O | | | | | | | | | SHEET |
|--------------------|--|-------------------|--------|----------------|---------------------------|----------|------------|------------------------|-------------|-----------|--------------|--------------|--------------|----------|----------|-------------|---|
| | ROJECT CABOT, CABOT & C.C.&F. WESTERN DEVEL SHELL CHEMICAL PLA | OPMENT C | | N | c. | SU | RFA | CE 31 | | | /AT | IOI | ī | | S T A | RTED | OF BORING 8-18-72 |
| TY | PE & DESIGNATION OF DRILL | SAMPLES Distur | | , | | НА | MME 7.4 | R | 11 | ٠- | | | | | | TH | 0 8-18-72 O WATER |
| - | 18" Bucket Auger | Undist | | | | | | 11 | | | | 0" | | | | | None |
| DEPTH FROM SURFACE | • | | ۲, | T E AVA | PENETRATION RESISTANCE | | <u></u> | <u>.</u> | Ļ | | | | | | | DRY UNIT | |
| FROM | CLASSIFICATION OF MAT (in feet) | TERIALS | SYMBOL | SAMPLE INTERVA | NETR. | | | MOIS | TUR | | ONT | ENT | • | | | DRY UN | |
| 16.30 | | ··· | S | SAH | PEI | | PL 4 | | | • | HAT | | -B L | L 5,0 | | _ A × | |
| | LOCATION: Refer to | | | · | | | -,- | | | | | | | | | | |
| | SURFACE GRAVEL: loos SANDY CLAY: fine, li | | | | | + | + | $\left \cdot \right $ | \dashv | \dashv | \dashv | + | + | + | \vdash | | -moist |
| 2 | stained, organics, d | | | | | | F | | | 7 | 7 | 4 | 7 | Ŧ | | | |
| | SANDY CLAY: fine san | | | | 5 | | | | | _ | # | 1 | 1 | 士 | | | |
| 3 | limonite staining, change to brown (CL) | olor | SPT | H | 10 15 | \vdash | + | | 1 | 3) | \dashv | \dashv | + | ╁ | + | | |
| 4 | CLAYEY SAND: silty, medium sand, limonit | | | | | | T | | 4 | - | 1 | \downarrow | 1 | Ţ | F | | -moist to |
| 5 | staining, brown (SC- | SM) | | | | | | | | | \parallel | \exists | | # | | | wet |
| 6 | | | | | | | + | | | \dashv | \dashv | \dashv | + | ╁ | ╁ | | |
| 7 | | | | | | 4 | Ŧ | | | 4 | - | 7 | - | 7 | F | | |
| 8 | • | | | | | | | | | | 1 | \downarrow | 1 | 土 | | | |
| | | | | | | | \pm | | | + | 1 | \dashv | + | + | \vdash |] | |
| 9 | | | SS | | | \Box | \bot | - | 19 | + | \dashv | \dashv | \mp | Ŧ | F | 103 | |
| 10 | | , | | H | | \perp | 上 | | | | \downarrow | | 士 | 土 | | | |
| 11 | | | | | | \vdash | ╀ | \vdash | | \dashv | \dashv | + | + | + | ╀ | | |
| 12. | | | | | | | + | | | 7 | \exists | 7 | - | Ŧ | F |] | |
| 13 | , | | · | | | _ | $^{\pm}$ | | | \exists | 1 | | \downarrow | 上 | | | |
| | • | | B | | | | - | • | 1 |) | | \pm | + | 土 | | | |
| 14 | change of color to 1 | ight | | | | | F | | | _ | | \dashv | - | 1 | \vdash | | |
| 15 | brown | _ ;= | | | | | 上 | | | | | 士 | # | 丰 | | | |
| 16 | | | | $\ \ $ | | | }- | | | + | _ | + | + | + | \vdash | 1 | |
| 17 | • | | | $\ $ | | | \perp | | | 7 | 1 | 4 | 1 | 1 | F | } | |
| | | | | $\ $ | | | 1 | | | \exists | \exists | 1 | # | 士 | t | | |
| 18 | SANDY/CLAYEY SILT::f | ine | | H | 5 | | + | H | - | + | + | + | + | + | - | | -wet |
| 19 | | | SPT | H | 8 | 1 | 1 | | 4 | 2/ | :1 | 1 | # | 1 | | | wet |
| 20 | | | | H | 11 | | \pm | | | 1 | \exists | \pm | + | \pm | | | <u>, , , , , , , , , , , , , , , , , , , </u> |
| z.C. 8 | A. FORW - 15 | | | | | | | | | | | | | В | OR | NG | NO. 10 |

| _ | | | | | | | | | | | <u></u> | | | | _ | | | | 7 |
|--------------------|-------------|--------------------------------|-----------------|--------|--|----------------|--------------|---------------|-------|--------------|--------------|-------------|-------------|--------------|-------------|-----------------|----|-------------|---|
| | 7298 | LOG | OF | BO | | G | . ! | 0 | | | | | | | | i | OF | | |
| DEPTH FROM SURFACE | | ATION OF MATE in feet) | RIALS | SYMBOL | SAMPLE INTERVAL PENETRATION RESISTANCE | | , , ,0 | | STUR | • N. | IT. | | .L 5,0 | DRY UNIT | WEIGHT-PCF. | | | | |
| 20 | | | | | | | | | | | • | | | - | | _ _ | | | |
| 21 | sand, mic | YEY SILT: fir aceous, odoro | e us, | | | | \pm | <u> </u> | | \pm | | | | _ | | | | | |
| 22 | tan (ML-C | L) | ALIAS A PARINGS | | | | + | - | | + | - | | | | | | | | |
| 23 | | | | | | | + | - | | \pm | | | \pm | 1 | | | | | |
| 24 | ceous, li | ND: silty, mi monite staine | d, | SS | | | + | | | • { | 27 | | | - | 7 | -wet | | | |
| 25 | (SC-SM) | , tan, odorou | | | | | \perp | <u> </u> | 1 | \pm | <u> </u> | | | 1_ | | | | | |
| 26 | TOTA | L DEPTH 25.0' | ٠. | | | | \pm | + | | \pm | | | | \exists | | | | | |
| 27 | | | | | | | + | + | | + | \perp | | | | | | | | |
| 28 | | | | ŀ | | | $^{+}$ | | | + | - | | ++ | | | | | | |
| 29 | | | | | | | ‡ | - | | ‡ | | | | 7 | | | | | |
| 30 | | | | | | + | ‡ | | | | + | | | | | | | | |
| 31 | | | | | | | 丰 | | | 1 | | | | _ | | | | | • |
| 32 | | | | | | | ‡ | - | + | - | - | | | _ | | | | | |
| 33 | | | | | | | ‡ | | | 1 | | | | 1 | | | | | |
| 34 | • | | | | | | + | | | - | | | | | | | | | |
| 35 | | | | | | | # | | | + | H | | | 1 | | | | | |
| 36 37 | | | | | | 1 | ‡ | - | | \ddagger | | 1 | # | 7 | | | | | |
| 37 | | | | | | + | # | | | - | Ħ | | ++ | | | | | | |
| 38 | | | | | | 1 | + | | | + | | | # | - | | | | | |
| 39 | | • | | | | _ | ‡ | | | + | | | # | 7 | | | | | |
| 40 | | | | | | \uparrow | ‡ | | | + | ! | | \ddagger | | | | | | |
| 41 | | | | | | + | ‡ | | | + | • | | ++ | | | | | | |
| 42 | | | | | | 1 | + | | - | + | | | # | - | | | | | |
| 43 | | á | | | | + | # | | + | + | \Box | | # | 7 | | | | | |
| 44 | | • | | | | + | + | | \mp | + | | | # | 1 | | | | | |
| 45 | | | | | | + | + | | + | + | i | | ++ | 1 | | ٠. | | | |

| | LO | G OF | ВС | F | RIN | G | I | 1 | | | | | | | | SHEET 1 OF 2 |
|--------------------|---|-----------------------------|-------------|-----------------|---------------------------|---------|-----|----------------|----------|-----|--|-----|-----------|--------------|---------------------------|-----------------|
| | ROJECT CABOT, CABOT & C.C.&F. WESTERN DEVEL SHELL CHEMICAL PLA | OPMENT C | • | EN | c. | Sυ | RFA | | . O | | TIO | N | | | DATE RTED | OF BORING |
| TY | PE & DESIGNATION OF DRILL 18" Bucket Auger | SAMPLES Distur Undist | bed/ | | | НА | | 0 | lb in | | 30 | t1 | | | PTH T | O WATER |
| DEPTH FROM SURFACE | CLASSIFICATION OF MAT (in feet) | | | SAMPLE INTERVAL | PENETRATION RESISTANCE | | | | TURE | • N | | | .L 6,0 | | DRY UNIT WEIGHT - PCF. | · |
| _ | LOCATION: Refer to | | | | | | | , , | | | , - | , | | | · | |
| | ASPHALT CONCRETE: de SANDY CLAY: silty, f medium sand, organic scattered friable sa pebbles, dark brown (CL-ML) | ine to | | | | | | | | | | | | | | -moist |
| | (CL-ML) | | | \coprod | 4 | | + | | _ | + | \pm | | + | + | j | • |
| 5 | | | SPT | H | 4 | | | | 15 | | | | | | | -moist |
| | color change to ligh | t brown | | | | | | | | | | | | | | |
| 8 | SILTY SAND: clayey, sand, very fine mica | fine . | | | | | | | 1 | - | | | | | | |
| 9 | light brown (SM-SC) | • | SS | | | | 1 | (1 | 11 | | - | | + | - | 123 | -moist |
| 11 | | | | | | | | | 1 | | | | + | + | | |
| | limonite staining | | | | | | | | | - | | | | | | |
| 13 | | | | | | | | | 1 | 1 | | | 1 | 士 | | |
| 14 | SAND: silty, fine to medium sand, micaceo | us. tan | SPT | H | 6 7 9 | | 4 (| 9) | - | + | + | | + | + | | moist |
| 16 | (SW) | | | | | | 1 | | | 1 | | | 1 | | 1 | |
| 18 | SILTY SAND: fine sand micaceous, fine organization organization (±) 2" inclusions, 1 tan (SM) | nics, rd | | | | | 1 | | | | | | | | | • |
| 19 20 | • | | SS | | | | F | • | (1) | | - | | | $oxed{\top}$ | | moist to wet |
| _ | A. FORM - 16 | · | | 11 | | <u></u> | | <u> </u> | | | ــــــــــــــــــــــــــــــــــــــ | 1_1 | | | ING M | NO11 |

PROJECT SHEET LOG OF BORING II 7298 2 OF 2 SAMPLE INTERVAL PENETRATION RESISTANCE DEPTH FROM SURFACE DRY UNIT WEIGHT-PCF. SYMBOL CLASSIFICATION OF MATERIALS (in feet) SILTY SAND: (continued) -moist to wet (SM) •; 22 23 В (18) 24 TOTAL DEPTH 25.0' 26 27 28 29 32 33 34 35 36 . 37 38 39 40

• • • • •

| 15 | Г | 1.0 | C ()E | D.C | | | | | ~ | | | ~ | | | | | | SHEET |
|--|--------|----------------------|----------|--------------|----------|------------|-------------------|-------|-----------|--------------|------------|-------------------------|-----------|--------------|--|---------|-----------|--------|
| C.C.&F. WESTERN DEVELOPMENT CO., INC. SHELL CHEMICAL PLANT PROPERTY TYPE & DESCRIPTION OF DRILL SAMPLES LAWRES | | | | שע | <i>)</i> | TIN | G | 1 | 2 | | | | | | | | | |
| SHELL CHEMICAL PLANT PROPERTY TYPE A DESIGNATION OF DRILL SAMPLES 18" Bucket Auger CLASSIFICATION OF MATERIALS (in feet) CLASSIFICATION OF MATERIALS (in feet) CLASSIFICATION OF MATERIALS (in feet) CLASSIFICATION OF MATERIALS SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION OF MATERIALS OR SET CLASSIFICATION NOONE OR SET | | · | | 30 | *., | | SU | RF. | | | | | 101 | ٧ | T | | | |
| Type a DESCRIATION OF DRILL 18" Bucket Auger Samples Disturbed Disturb | ' | | | • | ΤN | ic. | | | 3 | 7. | 0' | | | | - }- | | | |
| CLASSIFICATION OF MATERIALS (in feet) CLAS | TY | | SAMPLES | | | | НА | ММ | ER | | | | | | | | | |
| LOCATION: Refer to Plate No. ASPHALT CONCRETE: dense I CLAYEY SAND: silty, fine sand, reddish brown, micaceous (SC-SM) SS | | 18" Bucket Auger | | | | | | | | | | | 0 " | , | | | | None |
| LOCATION: Refer to Plate No. ASPHALT CONCRETE: dense I CLAYEY SAND: silty, fine sand, reddish brown, micaceous (SC-SM) SS | RFACE | | | ١. | AVAL | ON SE | | | | | | | | | | | T C.F. | |
| LOCATION: Refer to Plate No. ASPHALT CONCRETE: dense I CLAYEY SAND: silty, fine sand, reddish brown, micaceous (SC-SM) SS | N SU | CLASSIFICATION OF MA | TERIALS | 10B | INTE | RATI | | | | ٠ | • | L | | | 1 | | S P | |
| LOCATION: Refer to Plate No. ASPHALT CONCRETE: dense I CLAYEY SAND: silty, fine sand, reddish brown, micaceous (SC-SM) SS | E E | | | X W | 12 | NET SIS | | | MO | ISTU | AE | CONT | TEN'S | 1 % | | | 골 | } |
| LOCATION: Refer to Plate No. ASPHALT CONCRETE: dense CLAYEY SAND: silty, fine sand, reddish brown, micaceous (SC-SM) SS | DC P.T | | | S | SAW | PE | | | | | - 3 | NAT | 1. | | | | - ₹ | |
| CLAYEY SAND: silty, fine sand, reddish brown, micaceous (SC-SM) | | LOCATION: Refer to | Plate No | · · | | | | | | | | | | | | | - | |
| Sand, reddish brown, micaceous (SC-SM) | | | | | T | | П | T | I | Ţ. | | | 1 | \exists | Ŧ | I | | -moist |
| | | | | | | | ┝┼ | + | ╁ | ╁╴ | - | \vdash | ┪ | + | + | ╁ | | |
| SS | 2 | | • | 1 | | | | # | 1 | 1 | | | コ | \downarrow | 1 | 1 | 1 | |
| SS | 3 | | | | | | \vdash | + | + | + | - | dash | - | + | + | + | } | |
| Solution | | | | | | | | 士 | | \pm | | | 寸 | \pm | 士 | \perp | 1 | |
| Section Silt | 4 | | | SS | | | | Ţ | | 11 | 7.) | | | 1 | Ţ | I |] | -moist |
| Varies in silt and clay | 5 | | | | - | | $\vdash \vdash$ | + | + | + | | Н | \dashv | \dashv | + | ┿ | | |
| Varies in silt and clay | | , | | | | | | 1 | I | I | | | 耳 | | 1 | |] | |
| 7 content 8 | P | varies in silt and c | ·lav · | | | | ┝╌┼ | - | +- | + | - | H | \dashv | + | + | +- | | |
| 9 | 7 | | | | | | | 士 | | 土 | | | | | 土 | \pm | 1 | |
| 9 | | | · | | | | \vdash | + | + | ╀ | _ | Н | | - | + | + | ł | 1 |
| SPT 8 0 (11) | | | | | | | $\vdash \uparrow$ | + | + | ╁ | \vdash | H | 1 | + | + | + | 1 | |
| 10 | 9 | | | | Ц | | \Box | T | Ţ | Ţ | | | \exists | I | 1 | Ţ |] | |
| 11 | 回 | | | SPT | Н | | $\vdash \vdash$ | - | Ω | ₽ | ├ | H | - | \dashv | ╁ | ╁ | 1 | -moist |
| 12 | | | | | T | | | 1 | 工 | 丰 | | | コ | \perp | 1 | 丰 | 1 | |
| 13 | ∤"┤ | | | | | | dash | + | + | + | - | dash | - | + | + | + | 1 | |
| SS (30) 92 15 16 17 SILTY/CLAYEY SAND: 18 limonite (SM-SC) SPT 6 (32) 9 20 | 12 | | | | | | | † | \dagger | \perp | | | | 1 | 1 | 1 | 1 | |
| SS (30) 92 15 16 17 SILTY/CLAYEY SAND: 18 limonite (SM-SC) SPT 6 (32) 9 20 | 13 | | | | | | \Box | T | Ţ | igspace | | | \dashv | \perp | 1 | ╀. | - | 1. |
| SS | | | | | | | ${\mathbb H}$ | + | + | ╁ | +- | $\mid \rightarrow \mid$ | + | + | + | + | 1 | -wet |
| 16 17 SILTY/CLAYEY SAND: 18 limonite (SM-SC) SPT 6 (32) 9 | 14 | • | | SS | П | - | | 1 | 1 | I | | | 3 0 | ij | 1 | T | 92 | |
| 16 17 SILTY/CLAYEY SAND: 18 limonite (SM-SC) SPT 6 (32) 9 | 15 | | | <u> </u> | + | | \vdash | + | + | + | | \vdash | \dashv | + | ╁ | +- | | |
| SILTY/CLAYEY SAND: | | | | | | | | \pm | | | | | 士 | 士 | 1 | 士 | 1 | |
| SILTY/CLAYEY SAND: 18 limonite (SM-SC) SPT 6 (32) 20 | 16 | | | | | | | + | + | | \square | | 4 | 4 | + | | 1 | |
| SILTY/CLAYEY SAND: 18 limonite (SM-SC) SPT 6 (32) 20 | 17 | | | | | | | + | + | + | + | | \dashv | + | + | ╁ | 1 | |
| SPT 6 (32) 9 9 | | | | | | | П | 1 | I | I | | | \Box | | Ţ | I | 1 | |
| SPT 6 (32) 20 | 18 | | | | arphi | А | \vdash | + | +- | + | \vdash | - | \dashv | + | + | + | - | |
| 20 | 19 | • | | SPT | Н | | | _ | | \dagger | | • (| 3 2 |) | \dagger | _ | | |
| | | | | | П | | \prod | T | I | I | \Box | | | \bot | 1 | I |] | |
| PODING NO. 17 | | A. FORM - 16 | | L | П | | | | Щ. | 1_ | | | | | ــــــــــــــــــــــــــــــــــــــ | 1 | ING ' | NO. 12 |

| | PROJECT 7298 | LOG | OF | ВС |) [| | G | | 12 | | | | | | 1 | EET OF 2 |
|--------------------|-----------------|-----------------------------|-------|--------|-----------------|---------------------------|-------|-----|------------|------|-----|-------|------|-----------------------------|------|-------------|
| DEPTH FROM SURFACE | | ATION OF MATER (in feet) | RIALS | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | P L | A - | STUR | ٠٠, | ONT I | | DRY UNIT WEIGHT-PCF. | | |
| 20 | SILTY/CLAY | (EY SAND: 1) (SM-SC) | | | | | | | | | | | | | wet | |
| 23 24 25 | SILTY SANI |): fine green | (SM) | | | | | | | | | | | | -wet | |
| 26 27 28 | TOTAL | DEPTH 25.0' | | | | , | | | | | + | | | | | |
| 29 30 31 | | • | | | | | | | | | | | | | | |
| 32 33 | | | ! | | | | | | | | | | | | | |
| 34 35 36 | | | | | | | | | | | + | | | | | |
| 37 38 39 | | | · - | | | | | | | | | | | • | | |
| 40 | | • | | | | | | | | | | | | | | |
| 42 43 44 | pro- | ÷ | . [| | | | | + | | | + | | | | | |
| 45 | | | | ! | | | \pm | 土 | \coprod | | 土 | + | 1 | | | ·. |

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| | LO | G OF | ВО | F | RIN | G | 1 | 3 | | | | • | | | | SHEET 1 OF 2 |
|--------------------|--|----------------------------|--------|-----------------|---------------------------|----|-------------------|------|-----|------|-------------|------|----------|-----------|----------------------|---------------------------------|
| | C.C.&F. WESTERN DEVEL SHELL CHEMICAL PLA | COPMENT (| | ΙN | c. | su | RFA | | EL | | TIO | N | — | TAR | TEO | OF BORING 8-16-72 8-16-72 |
| TY | PE & DESIGNATION OF DRILL 18" Bucket Auger | SAMPLES Distur Undis | rbed, | | | | MM(14(fa: |) 1 | | | 0" | | | | TH TO | WATER Ione |
| DEPTH FROM SURFACE | CLASSIFICATION OF MA' (in feet) | TERIALS | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | P L 4 | MOIS | TUR | £ CO | NTEN | -eir | | | DRY UNIT WEIGHT-PCF. | • |
| | LOCATION: Refer to | Plate No | ٥,٠ | | | | | | | | | | | | | |
| 2 | dark brown, minor or | le), | | | | | | | | | | | | | | -moist |
| 4 | | | SPT | | 2 5 6 | | | | ([2 | 20) | | | | | | -moist to wet |
| 6 | color change to light brown with mica (CL) | | | | | | | | | | | | | | | |
| 8 | · • | | | | | | + | | + | | | | | | | · |
| 9 | | | SS | | | H | | | 1 | 3 | - | | | \exists | 121 | -moist |
| | SILTY SAND: clayey, sand, micaceous, lightown (SM-SC) | fine - | | | | | | | | | | | | | | |
| 12: 13 | | | | | | | | | | | | | | | | |
| 15 | | | SPT | | 6 6 7 | | • | C | 4) | + | | | | | | -moist |
| 16 17 | | | | | • | | | | | | | | | | | |
| 18 | _ | | | | | | + | | + | ‡ | | + | | コ | | |
| 20 | SILTY CLAY: fine san micaceous, light bro limonite stains (CL) | wn | SS | | | | | (1.3 |) | | | | | | 104 | |

PROJECT SHEET LOG OF BORING 13 2 OF 2 7298 PENETRATION RESISTANCE DRY UNIT WEIGHT-PCF. DEPTH FROM SURFACE SAMPLE INTERVAL SYMBOL CLASSIFICATION OF MATERIALS MOISTURE CONTENT % (in feet) 20 SILTY CLAY: (continued) moist 21 (CL) 22 24 25 TOTAL DEPTH 25.0' 26 27 28 29 30 31 32 35 36 37 38 39 40

| | | | | | | | | | | | | | | | | | SHEET |
|--------------------|--|-------------------|----------|----------------|---------------------------|---------------------|-------|---------------|--------------|-----------|-----------------|--------------|---------|------|----------|----------------|------------|
| | LO | G OF | BC | F | RIN | G | 1 | 4 | - | | | | | | | | 1 OF 2 |
| | ROJECT CABOT, CABOT & | | | | | SU | RF | ACE | Ε | LE | VAT | IOI | 1 | L | | | OF BORING |
| ' | C.C.&F. WESTERN DEVEL SHELL CHEMICAL PLA | | | LN | C. | | | 4 | 2. | 4 1 | | | | | | | 8-16-72 |
| TY | PE & DESIGNATION OF DRILL | SAMPLES Distur | | , | | НА | MM | | | bs | | | | | | | O WATER |
| | 18" Bucket Auger | Undist | • | | | | | | | | 3 | 0 " | | | | N | lone |
| DEPTH FROM SURFACE | | | | RVAL | PENETRATION RESISTANCE | | | | | | | | | | | T ČF. | |
| DE 30 | CLASSIFICATION OF MA | TERIALS | SYMBOL | SAMPLE INTERVA | RAT | | | | | | | | | | | UNIT T-PCF. | |
| 1 2 | (in feet) | | N X | 716 | NET | | | | | _ | CONT | | * | 1 | \dashv | DRY UN | |
| 8 | | | <u> </u> | Š | P 8 | | - | | | | MAT | | - | 6,0 | | _ ₹ | |
| | LOCATION: Refer to | | • | | | | | | | | | | | | | | |
| + | SAND/CLAY/SILT: fill rialconcrete, rubb | | | | | \vdash | + | + | ╀ | - | | + | + | + | | | |
| | etc. (CL-ML) | ,10, | | П | | | 上 | | | | | | 土 | 上 | | | -dry |
| 2 | CLAYEY SAND: fine to | medium | İ | | | \vdash | + | + | ╀ | | \vdash | + | + | ╀ | Н | | -moist |
| 3 | sand, silty, dark br | own, | | Ш | | | \pm | İ | | | | 1 | | | | | . |
| 4 | black organics (SC-S | M) | | \coprod | | | - | - | 1 | - | \vdash | - | - | - | - | | |
| | | | SS | Ш | | | \pm | | 生 | 5) | | \pm | | | | 118 | -moist |
| 5 | color change to brow | n with | | | | | + | - | + | | | - | | - | | | |
| 6 | | | | П | | | \pm | \perp | \perp | | | \pm | \perp | | | | |
| 7 | | | | П | | | 1 | _ | \vdash | | \vdash | 4 | \perp | L | | | |
| | | | | | | | | İ | 上 | | | 士 | | | | | |
| 8 | CLAYEY SAND: silty, | mica- | | | , | + | + | +- | ╀ | | \vdash | + | + | ╀ | | | |
| 9 | ceous, fine to mediu | m sand, | | | 6 | | | | 上 | | | \exists | \pm | 上 | | | i |
| 10 | <pre>very dense, limonite (SC-SM)</pre> | , brown | SPT | H | <u>12</u> 27 | | + | • | 16 | 18 | 1 | + | + | ╀╌ | Н | | -moist to |
| | (50 511) | | | H | | | | | 上 | | | # | \perp | | | | |
| 11 | | | | | | \vdash | + | + | ╀ | | \vdash | \dashv | + | ╀ | | | |
| 12 | CAND: -12-bb -11- | | | | | | | I | | | | | | | | | |
| 13 | SAND: slight silt co fine grained, micace | | | | | $\vdash \downarrow$ | + | + | + | \vdash | $\vdash \vdash$ | + | + | ┼- | \vdash | | |
| | limonite stained, br | | | Ц | | 口 | # | 士 | 丰 | | | \downarrow | # | | | | |
| 14 | (SW) | | SS | | | \vdash | + | (b | ╢ | H | | \dashv | + | + | H | 123 | -moist |
| 15 | | | | \prod | | | # | 丰 | 丰 | \square | | 1 | 丰 | L | П | | |
| 16 | | | | | 1 | \vdash | + | + | + | H | H | \dashv | + | ╁ | Н | | |
| | | | | | | | 丰 | 1 | 1 | | | # | # | 1 | | | |
| [7] | ** | • | | $\ \ $ | | + | + | + | + | H | $\vdash \vdash$ | + | + | 十 | \vdash | | |
| īВ | SAND: silty, clayey, | | | $\ \ $ | · | | 士 | 1 | | | | # | 1 | 丰 | | | |
| 19 | ceous, limonite, bro | wn (SW) | | H | 12 | + | + | + | + | H | \vdash | \dashv | + | +- | Н | | -moist |
| | | | SPT | H | 16 | | 1 | 11 | (| | | 1 | | | | | |
| 20 | A. FORM - 16 | | | П | 18 | | | | | Ш | | | | L Pr | | NG N | |
| | | | | | | , | | | | | | | | 0(| اکار | IN CO. | · - + - |

| | . LO | G OF | ВС | F | RIN | G | | 15 | - | | - | | | | | SHEE <u>1</u> OF | |
|--------------------|---|------------------|--|----------------|---------------------------|----------|---------|-----------|-----------------|--------|----------|-----------------|-----|-----------|-------------------------|---------------------|-----|
| | OJECT CABOT, CABOT & | | | | _ | SU | RF. | ACE | EL | EV4 | TIO | N | T | | | OF BORIN | |
| ' | C.C.&F. WESTERN DEVEI SHELL CHEMICAL PLA | | | ΕN | C. | | | 30 | 5.7 | , , | | | _ | | RTED PLETED | 8-17 | |
| TY | PE & DESIGNATION OF DRILL | SAMPLES | | | | НА | | ER | | | | | | | | WATER | -/6 |
| | 18" Bucket Auger | Distur Undist | | | | | | 40 al: | | | 30 | 91 | | | N | lone | |
| DEPTH FROM SURFACE | | | | MAL | PENETRATION RESISTANCE | | , | | | | | | , | | DRY UNIT WEIGHT-PCF. | | ļ |
| 30 30 | CLASSIFICATION OF MAT | TERIALS | SYMBOL | SAWPLE INTERVA | TAN | | | | | | | | | | NS I | | 1 |
| F. | (in feet) | ٠ | SYN | 3 | ENE | - | <u></u> | HOI: | TURI | co | HTER | T % | | | DRY | ļ | i |
| 8 | | | Ĺ | Š, | <u>a</u> æ | | | | | | AT. | | 8,0 | | ≯ | | |
| | | | | | | | | | | | | | | | | | |
| | SURFACE GRAVEL: loos | | | П | | П | \bot | | \Box | Ţ | \bot | \Box | I | Ц | | -moist | to |
| - | SANDY CLAY: silty, f sand, small friable | nepples | | | | ┝┼ | + | +- | \vdash | + | + | \vdash | + | H | | dry | |
| 2 | reddish brown (CL-ML | ,) , | | Ц | | | 工 | 1 | 口 | 1 | 二 | | 工 | | | -moist | |
| 3 | | | SS | П | | ╟┼ | + | 4: | 4 | +. | +- | - - | + | \vdash | 133 | | |
| | CLAYEY SAND: silty, | fine to | | H | | | 士 | | | 土 | 士 | | 士 | | | | |
| 4 | medium sand, few pea | sized | (| П | | | 1 | 1_ | \Box | 1 | \bot | | 1 | | | | |
| 5 | clay pebbles, reddis | n brown | | П | | ┝┼ | 十 | +- | $\vdash \vdash$ | ╁ | + | - | + | H | | | |
| | : | • | | | | 口 | 1 | 上 | 口 | 1 | 1 | | 1 | | | | |
| 6 | | | | | | - | + | ┼- | ┞┼ | + | + | - | ╁ | H | | 1 | |
| 7 | | | } | | | | 1 | | | 士 | <u> </u> | | 土 | | | | 1 |
| 8 | • | | | П | | \vdash | \bot | 1 | | 1 | | | 1 | | | | |
| | limonite stains & mi | caceous | | П | | \vdash | + | +- | | + | +- | \vdash | +- | H | | | |
| 9 | | | ss | П | | | 1 | 41 | 3 | 1 | \top | | 1 | | 117 | -moist | |
| 10 | | | | H | | \vdash | + | +- | H | + | ╀ | $\vdash \vdash$ | ╁ | ╁┤ | / | 1.10250 | |
| | | | | | | | 1 | | | 士 | 士 | | 土 | | • | | |
| | | | | $\ \ $ | ! | \prod | Ţ | <u> </u> | П | T | \perp | II | + | \Box | | 1 | |
| 12 | | | | $\ \ $ | | \vdash | + | + | H | + | + | H | +- | H | 1 | | |
| 11 | | - | | | | | 丰 | | 口 | 工 | I | | I | \square | I | | Ì |
| 13 | | : | | H | 6 | H | + | + | $\vdash \vdash$ | + | + | \vdash | + | | { | | |
| 14 | | | SPT | 日 | 5 | 世 | 土 | | 112 | 0) | 士 | 土 | 1 | | į | -moist | to |
| 15 | color change to brow | n | | \prod | 9 | igoplus | \perp | 1 | $oxed{\Box}$ | \bot | 1 | | + | | ł | "" | |
| 鬥 | • | | | $\ \ $ | | H | + | + | $\vdash \vdash$ | + | +- | $\vdash \vdash$ | + | \vdash | } | | |
| 16 | | | | | | | 1 | I | | 工 | | | I | | | | , |
| 17 | | | | | | \vdash | +- | + | $\vdash \vdash$ | + | + | - | + | \vdash | } | | |
| | | | | | | j | + | + | | + | \pm | 十 | 1 | | 1 | | |
| 18 | | | | $\ \ $ | | | T | \prod | I | Ţ | I | | T | | | | |
| 19 | • | | | | | -+ | + | +- | $\vdash \vdash$ | + | +- | $\vdash \vdash$ | + | H | | 1 | . |
| | · | | | | | | 土 | | | 土 | | | 上 | | |] . | |
| 20 | 4. f0R# - 15 | | | Ц | | Ш | 1 | | | | | | 1_ | | ING N | 0 15 | |

| | | V | ÷ | - | | | | | | | | | | | | | | | |
|--------------------|--|--|--------|---------------------------|---------------------------|----------|---|---------------|---------------|----------------|--------------|----------|--------------|-------------|---------------|-----------|-------------------------|---------------|----|
| | PROJECT 7298 | LOG OF | ВС |) F | RIN | G | ; | 15 | 5 | | | | | | | | | SHEE 2 OF | |
| DEPTH FROM SURFACE | | ATION OF MATERIALS (in feet) | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | | | MOIS 2, | | - | NAT. | EHT | -■ (| 1 | | DRY UNIT WEIGHT-PCF. | | |
| 20 | CLAYEY SA | ND: fine sand, | | П | | П | | | \Box | I | コ | T | 工 | T | | П | | -wet | |
| 21 | stains (So | - | SPT | H | 7 | | | | | - | • | 27 | | + | $\frac{1}{1}$ | | | | |
| 23 | fine white | e lime(?) s | | \prod | 14 | | | | | | | 1 | - | - | - | | | | |
| 24 25 |] | • | | | | | | | | | | | | + | - | | | | |
| | SILTY SANI | D: fine, mica- nor clay, brown | В | $\frac{ \cdot }{ \cdot }$ | | | | • | (1 | 3 } | 1 | + | 1 | ‡ | ‡ | | | -moist | |
| 27 28 | (SM) | ior cray, brown | | | | | | | | + | # | | + | + | | | | | |
| | SAND: fine | e sand, clean, , tan, several pea | ss | | | - | + | ,) | | 1 | | + | | + | | | 117 | -moist | to |
| 30 | | y lumps (SW) | | | | | | | | 1 | | | | 1 | | | | | |
| 31 | | | | | | | | | 1 | 1 | + | | | 1 | | | | | |
| 33 | | | | | 8 | | | | + | + | + | | 1 | + | | | | | |
| 34 35 | SILTY/CLAY | YEY SAND: (SM-SC) | SPT | H | 14 12 | | • | 4 | 3) | + | + | | + | + | | | | -moist | |
| 36 | | , limonite stained s (+) pea sized, an & brown | | | | | | 1 | $\frac{1}{1}$ | | | | | 1 | | \exists | | | |
| 37 38 | (SM-SC) | | | | | | | 1 | 1 | 1 | 1 | - | | - | | | | _ | |
| | SILTY/CLAY micaceous, | | В | \prod | | | | | 1 | + | # | + | + | + | | | | -moist | |
| | to 1" (SM- | orown, clay lumps -SC) | SS | | | | | 1 | | + | 21 | + | | | | | 96 | -moist wet | to |
| 42 | r | | | | | | | 1 | 1 | + | | 1 | + | + | | | ٥ر | | |
| | | Y CLAY: calcare- | | | | | | + | + | + | 1 | <u> </u> | + | | | | | | |
| | ous, limon numerous s greenish t | ite, micaceous, \\ hell fragments, \\ an (CL-ML) | | | | - | - | $\frac{1}{1}$ | 1 | | | | + | | | | | | |
| C.O. | A.FORM - IBA | · · · · · · · · · · · · · · · · · · · | - | | | <u> </u> | | | | | | <u> </u> | | | | ~ | | 15 | |

PROJECT SHEET LOG OF BORING 15 3 of 3 7298 PENETRATION RESISTANCE SURFACE SAMPLE INTERVAL DRY UNIT WEIGHT-PCF. CLASSIFICATION OF MATERIALS (in feet) SILTY/SANDY CLAY: 46 (continued) (CL-ML) -moist CLAY: calcareous, numerous В 47 shell fragments, limonite, greenish tan (CL) 48 49 COQUINA: numerous fragments dense, well cemented, brown 50 to tan SILTY SAND: fine, micaceous, 51 reddish brown (SM) TOTAL DEPTH 51.0'

K.O.A A. FORM - 16

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| | LO | G OF | BC |) | RIN | G | | 16 | | | | , | | | | | SHEET 1 OF 2 |
|------------------|--|--------------------|--------|-----------------|---------------------------|---------------------|----------|----------------|---------|----------|-----------------------|----------|--------------------|--|-----------|------------------------|-----------------|
| PF | OJECT CABOT, CABOT & | | | | | | | AC | | 1 F | VAT | 101 | | · | | DATE | OF BORING |
| | C.C.&F. WESTERN DEVEL | | o.,: | I:V | c. | " | ,,,, | | | 0' | | , | • | ·s | | TED | 8-17-72 |
| <u> </u> | SHELL CHEMICAL PLA | NT PROPE | | | | | | | | | | | | | | LETED | 8-17-72 |
| TY | PE & DESIGNATION OF DRILL | SAMPLES Disturb | \ 5ar | | | H. | | MER L40 | | he | | | | 0 | DEP | TH T | O WATER |
| | 18" Bucket Auger | Undist | | 1 | | | | al | | | | 0" | | | | | lone |
| PTH FROM SURFACE | . ' | |] _ | SAMPLE INTERVAL | PENETRATION RESISTANCE | | | | | | | | | | | DRY UNIT WEIGHT-PCF | |
| 38 38 | CLASSIFICATION OF MAT | FRIALE | SYMBOL | 1 E | RAT | | | • | | • | | | | | \neg | UNIT | |
| = | (in feet) | | X. | | NE T | <u> </u> | | | 157 | JRE | CON | TENT | * | <u>. </u> | | 盗 | |
| 1 2 | | | σ | 3 | PEI | | | . | | | NA. | T. | -11 | 5,0 | | Ā ¥ | |
| | LOCATION: Refer to | Plate No | | + | | <u></u> | | - | -1- | <u>-</u> | | | | 7- | | | |
| | GRASS: sod-roots | | | П | | | | | I | | | \Box | | | | | -moist |
| 1 | SANDY CLAY: fine san | | | | | \Box | \Box | \perp | \bot | \bot | П | \bot | $oldsymbol{\perp}$ | | П | | |
| 2 | silty, organics (roo dark brown (CL-OL) | ts), | | | | \vdash | -+ | + | + | + | $\lVert \cdot \rVert$ | \dashv | + | +- | | | |
| 1 | Cark Drown (CD-OD) | | | | | | \dashv | + | + | + | Н | + | + | \vdash | H | | |
| 3 | | · | | | | | | İ | 1 | | | 寸 | | | \Box | | |
| | | | | | | | | \perp | \perp | | | \Box | | | | | |
| 4 | | | | | | - | _ | + | 4 | \perp | \sqcup | \dashv | - | | Ш | | |
| 5 | SANDY CLAY: fine san | d. | | ╁┤ | | Н | \dashv | ╬ | +- | + | $\left\{ -\right\}$ | \dashv | + | ╁╌ | H | | |
| | silty, variable sand | ۵, | SS | | | Н | \dashv | • | 1/3 | 7) | | 7 | + | + | Н | 118 | -moist |
| 6 | content, micaceous, | reddish | B | П | | | | | | | | | | | | | -moist to |
| 7 | brown (CL) | | 12 | Ц | | | | | | 1.8 | | \perp | | | Ц | | wet |
| | | | | | | Н | \dashv | + | + | + | + | - | + | ╂╌ | Н | | |
| 8 | | | | | | H | + | + | + | +- | \vdash | 十 | + | + | Н | | • |
| | | | | | 5 | | | \perp | I | | | \Box | 工 | | | | |
| 9 | | | SPT | П | 4 | | | - | 11 | 6) | П | _ | \bot | $oxed{oxed}$ | Ц | | -moist |
| 10 | | | | \mathbb{H} | 6 | Н | \dashv | | ╬ | ┼- | \vdash | \dashv | + | 1 | H | | |
| | | | | П | | Н | + | + | ╁ | ╁ | \vdash | \dashv | + | ╁ | Н | | |
| | | | | П | | | _ | + | T | 1 | | | | | | | |
| | | | | | | П | \Box | | I | | | | 工 | \Box | 口 | | |
| 12 | | | | | | Н | | | 4 | + | \sqcup | 4 | | - | H | | 1 |
| 13 | • | | | | | Н | \dashv | + | +- | +- | Н | + | - | + | ╁┥ | | |
| | · | | | | | H | | _ | 士 | 1 | П | _ | \pm | | | | |
| 14 | GTT MY /GT STORY | | | | | | \Box | 1 | I | I | | \Box | I | | \Box | | -moist |
| 1 | SILTY/CLAYEY SAND: f. nedium, several clay | ine to | | | , | $\vdash \downarrow$ | - | + | + | + | Н | - | | | ┦┥ | | |
| 屵쒸 | micaceous, reddish by | | | | | Н | + | + | + | + | H | - | +- | - | H | | |
| 16 | (SM-SC) | | | | | ┝┤ | + | + | + | + | H | \dashv | + | 1 | H | |] |
| | | | | | ļ | | \Box | | I | | | | | L | \square | | |
| 17 | | | | | | | \dashv | 1 | \bot | 1 | | \Box | 1 | igspace | Щ | | |
| 18 | | | | | | | - | 4 | + | + | Н | | + | ╁ | H | | |
| | SILTY SAND: fine to I | nedium | | H | | \vdash | + | + | +- | + | \vdash | + | +- | \vdash | ╁┥ | | -moist |
| 19 | sand, micaceous, lime | | SS | | | H | 7 | 7 | 11 | - | Н | 1 | - - | 1 | H | 113 | |
| | light brown (SM) | · | | П | | | | | I | | | | | | | | |
| 50 | | | | Ш | | | \Box | | I | | | | \perp | | \Box | | |
| # .U. E | A. FOR # - 16 | | | | | | | | | | | | | В | ORI | NG N | o. <u>16</u> |

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|--------------------|------------------------|-----------------------------|---------------|--------|-----------------|---------------------------|-------------|-------------|----------|-----|------------|---|---------------------------------|-------|-------------------------|--------------|-----|-----|
| | 7298 | LOG | OF | В | | | G | 16 | 5 | | | | | | , | 2 OF | | _ |
| DEPTH FROM SURFACE | | ATION OF MATER (in feet) | HALS | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | P. 4 | 2,0 | | NAT. | | 6 1 1 1 1 1 1 | | DRY UNIT WEIGHT-PCF. | | • | - |
| 20 | | | | | | | | | | T T | т- | · | | | · | 1 | | |
| 21 | SILTY SAN | D: (continued) |) | ļ. | | | | | 1 | | + | | | | | | | |
| 22 | • | | | | | | | | + | | + | | | | | | | |
| 23 | scattered greater c | clay lumps, lay content | | В | | | | | 4 | 19) | | | | | | -moist | to | |
| 25 | | DEPTH 25.0' | , | | | | | | | | | | | | | wet | | 1 |
| 26 | , | | | | | | | | | | | E | | | | | | |
| 27 | | | | | | | | | + | | + | | | | | | • | |
| 28 | | | | | | | - | | \perp | | # | | | | | | | |
| 29 30 | | | | | | | = - | | 1 | | + | | | | | | | |
| 31 | - | | | | | | - | | | H | + | | - | | | : | | |
| 32 | | | | | | | | | | | | | | | | • | | |
| 33 | | | | | | | 1 | | | | \pm | | | | | | | |
| 34 | | | | | | | + | | \perp | | \ddagger | | | | | | | |
| 35 | | · | | | | ļ | + | | - | | + | | | | | | | |
| 36 | | | | | | Ì | + | H | | | + | | _ | | | | • | |
| 37 | | | : | | | | | | | | | | | | | | | |
| 38 | | | - | | | Į. | | | | | | | | | | | | |
| 39 | | | | | | | | | + | | | | | | | | | |
| 40 | | | | | | | 1 | | | | + | | | | | | | |
| 41 | | | | | | } | + | | | | ‡ | | - | | | | | |
| 42 | | | İ | | | } | + | | | | + | | + | Ħ | | | | |
| 44 | | • | | | | ļ | + | | | 1 | ‡ | | 1 | H | | | • | |
| 45 | | | | • | | - | + | H | | + | + | | | H | | ·. | | |
| | A. FORM - 18A | | | | | | | | <u>-</u> | | <u> </u> | | 0.4 | - n i | N C N1 | 7 1 | ς . | •: |

| FROJECT CABOT, CABOT & FORES C.C.AF. WESTERN DEVELOPMENT CO., INC. SHELL CHEMICAL PLANT PROPERTY TYPE DESIGNATION OF DRILL 18" Bucket Auger Sample Sam | | | | | | | | | | | | | | | | | SHEET |
|--|--|----------------------|-----------|----------|--------------|------------|----------|----------|----------|----------|------------|--------------|--------------------------|--------------|-------|----------|------------|
| C.C.AF. WESTERN DEVELOPMENT CO., INC. SHELL CHEMICAL PLANT PROPERTY TYPE & DESIGNATION OF ORBLE 18" Bucket Auger CLASSIFICATION OF MATERIALS (in feet) CLASSIFIC | | LO | G OF | BC |) F | RIN | G | ļ | 7 | | | | | | , | | |
| SHELL CHEMICAL PLANT PROPERTY 18" Bucket Auger Disturbed/ Undisturbed 140 lbs | | | | <u> </u> | TN | ic - | su | RFA | | | | ATIC | N | | | | |
| 18" Bucket Auger Disturbed falling 30" None CLASSIFICATION OF MATERIALS (in feet) Substituted falling 30" LOCATION: Refer to Plate No. SURPACE GRAVEL: loose SANDY CLAY: silty, red SS SANDY CLAY: silty, red Content, fine sand, several small clay lumps (+) 1/2", reddish brown (SM) SILTY SAND: slight clay for small clay lumps (+) 1/2", reddish brown (SM) SPT 8 (15) SILTY SAND: fine to medium (SM-SC) SSILTY SAND: fine to medium sand, micaceous, limonite stains, light brown (SM) SSILTY SAND: fine to medium (SM-SPT 13 (10d)) -moist moist moist stains, light brown (SM) SSILTY SAND: fine to medium (SM-SPT 13 (10d)) -moist moist moist moist moist stains, light brown (SM) SSILTY SAND: fine to medium (SM-SPT 13 (10d)) -moist | L | SHELL CHEMICAL PLA | ANT PROPI | | | | | | | 7 • ! | 5 ' | | | _ | COM | PLETED | 8-17-72 |
| CLASSIFICATION OF MATERIALS (in feet) LOCATION: Refer to Plate No. SURPACE GRAVE: loose 1 SAND: silty, clayey, dark brown (SW) SILTY SAND: slight clay content, fine sand, several small clay lumps (+) 1/2", redish brown (SM) SPT 8 | ' | | Distu | | | | HA | | | 11 | os | | | | DE | | |
| LOCATION: Refer to Plate No. SURFACE GRAVEL: loose 1 SAND: silty, clayey, dark brown (SW) 2 3 SANDY CLAY: silty, red 4 (CL) 5 SILTY SAND: slight clay content, fine sand, several small clay lumps (±) 1/2", 7 reddish brown (SM) 8 9 10 increased clay content (SM-SC) 12 13 14 SSS (13) 14 SSS (13) 15 16 17 18 SILTY SAND: fine to medium sand, micaceous, limonite stains, light brown (SM) SPT 8 13 (R) 14 -moist -moist -moist | <u> </u> | | Undis | turb | eć | | | £ | al: | liı | ng | 30 | * | | | | |
| LOCATION: Refer to Plate No. SURFACE GRAVEL: loose 1 SAND: silty, clayey, dark brown (SW) 2 3 SANDY CLAY: silty, red 4 (CL) 5 SILTY SAND: slight clay content, fine and, several small clay lumps (±) 1/2", 7 reddish brown (SM) 8 9 10 increased clay content (SM-SC) 12 13 14 SSS (13) 14 SSS (13) 15 16 17 18 SILTY SAND: fine to medium small clay content (SM-SC) 19 SILTY SAND: fine to medium small clay content stains, light brown (SM) SPT 8 10 110 110 110 111 111 115 115 116 117 118 SILTY SAND: fine to medium small clay content SSS (13) 119 110 110 110 111 111 111 112 113 114 115 115 115 115 117 118 118 119 119 119 119 110 110 110 110 110 110 | URFAC | | | ي. | ERVAL | TON TON | | | | | | | | | | PCF. | |
| LOCATION: Refer to Plate No. SURFACE GRAVEL: loose 1 SAND: silty, clayey, dark brown (SW) 2 3 SANDY CLAY: silty, red 4 (CL) 5 SILTY SAND: slight clay content, fine sand, several small clay lumps (±) 1/2", 7 reddish brown (SM) 8 9 10 increased clay content (SM-SC) 12 13 14 SSS (13) 14 SSS (13) 15 16 17 18 SILTY SAND: fine to medium sand, micaceous, limonite stains, light brown (SM) SPT 8 13 (R) 14 -moist -moist -moist | ROBS | | TERIALS | W B O | Ξ | TRA | | | • | | | | | • | | S F | |
| LOCATION: Refer to Plate No. SURFACE GRAVEL: loose 1 SAND: silty, clayey, dark brown (SW) 2 3 SANDY CLAY: silty, red 4 (CL) 5 SILTY SAND: slight clay content, fine and, several small clay lumps (±) 1/2", 7 reddish brown (SM) 8 9 10 increased clay content (SM-SC) 12 13 14 SSS (13) 14 SSS (13) 15 16 17 18 SILTY SAND: fine to medium small clay content (SM-SC) 19 SILTY SAND: fine to medium small clay content stains, light brown (SM) SPT 8 10 110 110 110 111 111 115 115 116 117 118 SILTY SAND: fine to medium small clay content SSS (13) 119 110 110 110 111 111 111 112 113 114 115 115 115 115 117 118 118 119 119 119 119 110 110 110 110 110 110 | HT4 | (in feet) | | SYI | AMPLE | ENE | | PL | 401 | TUR | £ C | ONTE | T 16 | LL | | OR. | |
| SURFACE GRAVEL: loose SAND: silty, clayey, cark | 8 | IOCATION. Pofor to | Dista N | <u> </u> | 5 | | | 1,0 | 2 | | | | | 6,0 | | | <u> </u> |
| SAND: silty, clayey, dark brown (SW) | <u> </u> | | | · · | | | П | _ | | | Т | - | 1 1 | _ | _ | | <u> </u> |
| SANDY CLAY: silty, red (CL) SANDY CLAY: silty, red (CL) SILTY SAND: slight clay content, fine sand, several small clay lumps (±) 1/2", reddish brown (SM) SPT 8 | 口 | SAND: silty, clayey | | | | | 耳 | 1 | | | | 土 | | \downarrow | 士 | 1 | -moist |
| SANDY CLAY: silty, red (CL) SILTY SAND: slight clay content, fine sand, several small clay lumps (+) 1/2", reddish brown (SM) SPT 8 | 2 | brown (SW) | | | | | \vdash | +- | +- | \vdash | + | + | H | + | ╁ | 1 | |
| SANDY CLAY: silty, red (CL) SILTY SAND: slight clay content, fine sand, several small clay lumps (+) 1/2", reddish brown (SM) SPT R • 15) increased clay content (SM-SC) SS • (13) SS • (14) Fig. SS • (13) SS • (13) The sand of the sand of | 7 | | | | | | \Box | T | | \Box | 7 | 1 | | 7 | 1 | 1 | |
| SILTY SAND: slight clay 6 content, fine sand, several small clay lumps (+) 1/2", 7 reddish brown (SM) SPT R + 15) Increased clay content (SM-SC) SST R + 15) SPT R + 15) SST R + 15) | | SANDY CLAY: silty, 1 | red | SS | + | | | 土 | | 1 6 | 寸 | \pm | | 士 | \pm | 1110 | -moist |
| SILTY SAND: slight clay content, fine sand, several small clay lumps (+) 1/2", reddish brown (SM) SPT 8 • (15) increased clay content (SM-SC) SSS • (13) SSS • | 4 | (CL) | | | \downarrow | | 1 | 1 | | | 4 | 1: | | 1 | - | | Ì |
| Content, fine sand, several small clay lumps (+) 1/2", reddish brown (SM) SPT S (14) Increased clay content (SM-SC) SSPT S (14) Increased clay content (SM-SC) SSPT S (14) Increased clay content (SM-SC) SSPT S (14) Increased clay content (SM-SC) SSPT S (14) Increased clay content (SM-SC) SSS (13) Increased clay content (SM-SSS) SSS (13) Increased clay content (SM-SSS) SSS (13) Increased clay content (SM-SSS) SSS (13) Increased clay content (SM-SSS) SSS (13) Increased clay content (SM-SSS) SSS (13) Increased clay content (SM-SSSS) Increased clay content (SM-SSSS) SSS (INCREASE (SM-SSSSS) Increased clay content (SM-SSSSS) Increased clay content (SM-SSSSSS) Increased clay content (SM-SSSSSSSS) Increased clay content (SM-SSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSSS | 5 | | · | | | | 廿 | 上 | | | 士 | 土 | | 1 | 土 | 1 | <u>.</u> . |
| Small clay lumps (+) 1/2", reddish brown (SM) | 6 | content, fine sand, | several | | | | \vdash | + | \vdash | Н | \dashv | + | H | ╫ | ╀ | ł | |
| SPT | | small clay lumps (+) | 1/2", | | | | | 1 | | | 7 | 1 | | # | 1 | 1 | } |
| SPT 8 • (15) increased clay content (SM-SC) B • (14) SSS • (13) 12 To a moist SSS • (13) To a moist SSS • (13) To a moist SSS • (13) To a moist To a moist To a moist SSS • (13) To a moist To a moist SSS • (13) To a moist SSS • (13) To a moist To a moist SSS • (13) To a moist To a moist SSS • (13) To a moist To a moist SSS • (13) To a moist To a moist SSS • (13) To a moist To a moist To a moist | | readish piomi (sw) | | | | | H | | | | 士 | | | 士 | | <u> </u> | |
| SPT 8 (15) increased clay content (SM-SC) B (14) ISSILTY SAND: fine to medium | 8 | | | | + | | H | \perp | - | | + | + | \vdash | - | + | } | |
| increased clay content (SM-SC) SS (13) SS (13) Id If If IF IF IF IF IF IF IF IF | 9 | | | SPT | | | 廿 | 土 | | 1 | 立 | 土 | 廿 | 1 | 土 | 1 | -moist . |
| Increased Clay content (SM-SC) SS (13) 14 SS (13) 15 16 17 18 SILTY SAND: fine to medium sand, micaceous, limonite stains, light brown (SM) SPT 13 (10) | 10 | | | | + | 5 | \vdash | + | 1. | | + | + | H | ╬ | ╁ | 1 | |
| SS (13 123 moist 15 | | | ent | В | | | \Box | # | | | 1 | 1 | | 1 | T | 1 | |
| SS • (13 123 -moist 15 16 17 18 SILTY SAND: fine to medium 19 sand, micaceous, limonite stains, light brown (SM) SPT 13 • (10) | | (SM-SC) | | | | | | + | | | 士 | \pm | | \pm | \pm | 1 | |
| SS (13) 123 -moist 15 16 17 18 SILTY SAND: fine to medium 19 sand, micaceous, limonite stains, light brown (SM) SPT 13 (10) | 12 | | | | | | H | T | - | | 1 | - | \prod | 1 | T | } | |
| IS IS SILTY SAND: fine to medium sand, micaceous, limonite stains, light brown (SM) SPT 13 (10) | 13 | | | | \prod | | | 土 | | | # | 1 | 口 | 士 | # | 1 | |
| SILTY SAND: fine to medium sand, micaceous, limonite stains, light brown (SM) SPT 13 (10) | 14 | | | SS | | | \vdash | ┿ | (3 | 3 | + | + | ╁┼ | + | +- | 123 | -moist |
| SILTY SAND: fine to medium sand, micaceous, limonite stains, light brown (SM) SPT 13 (10) | I | | | | П | | | 1 | | | 7 | 1 | П | 1 | # | } | |
| SILTY SAND: fine to medium sand, micaceous, limonite stains, light brown (SM) stains, light brown (SM) SPT 13 (10) | | | | | | | \perp | \pm | | | 士 | 1 | | \pm | +- | j | |
| SILTY SAND: fine to medium sand, micaceous, limonite stains, light brown (SM) stains, light brown (SM) stains | 16 | • | | | | | H | Γ | - | | 4 | \bot | H | - | - | 1 | |
| SILTY SAND: fine to medium 19 sand, micaceous, limonite stains, light brown (SM) SPT 13 (10) -moist | 17 | , | | | | | | # | | | # | 士 | | 1 | | 1 | |
| SILTY SAND: fine to medium 19 sand, micaceous, limonite stains, light brown (SM) SPT 13 (10) | 18 | | | | | | + | + | | \dashv | + | + | $\left\{ \cdot \right\}$ | + | + | | |
| stains, light brown (SM) SPT 13 (1d) | | | | | Ц | | | 1 | | | # | 1 | | # | 1 | 1 | |
| | 19 | | | SPT | Н | | + | + (| (10 | , | + | + | - | + | +- | 1 | -moist |
| 20] 8.0.4.//08H-10 BORING NO. 17 | 20 | | | | | 15 | | I | | | 1 | | | 工 | | 1 | 1 77 |

BORING NO. 17 PLATE NO. 47

| | PROJECT 7298 | LOG | OF | ВС |) F | RIN | G | ŀ | 7 | | | | · | | | | SHEET 2 OF 2 |
|--------------------|-----------------|----------------------------|---------|--------|-----------------|---------------------------|---|--------|---|-------|---|----------|----------|----------|---|-------------------------|-------------------|
| DEPTH FROM SURFACE | | ATION OF MATER in feet) | RIALS | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | PL 1,0 | ▲ | STUR! | | AT. | | No Li | | DRY UNIT WEIGHT-PCF. | • |
| 20 | | | | | | | | | | • | | _ | | | | | |
| 21 | sand, var: | D: fine to me | ntent, | | | | H | | | | 1 | I | | | | | -moist |
| 22 | several 2' | , light brown sized brown | clay | | | | | 1 | | | # | + | | | | 1 | · |
| 23 | inclusions | 5 (SM) | | | | | | + | | | 1 | # | | | | 1 | |
| 24 | | | | · · | | | | 1 | | | 1 | + | | | | 1 | _ gg/cum-remotive |
| 25 | | DEDMU 25 A1 | <u></u> | | \prod | | | # | - | | # | + | | | | | |
| 26 | TOTAL | DEPTH 25.0' | | | | | | + | | H | # | + | | | | 1 | |
| 27 | | | | | | | | 1 | - | | # | # | | | | 1 | |
| 28 | | | | | | | 1 | 1 | | | ‡ | + | | | - | 1 | · |
| 29 | | | | | | | | + | | | ‡ | + | | | | | |
| 30 | | | | | | | | # | | | ‡ | 1 | | | 1 | | ٠. |
| 31 | | | | | | | | 1 | | | 1 | - | | | 1 | | |
| 32 | | | | | | | | + | | | + | + | | | - | 1 | |
| 33 | | | | | | | 1 | 1 | | | + | | | | - | | |
| 34 | | | į | | | | 1 | + | H | | + | | | | + | | |
| 35 | | | | | | | 7 | - | | | ‡ | | | | - | | |
| 36 | | | | | | | 1 | + | | - | # | | | | + | 1 | |
| 37 | | | | | | | 7 | + | | + | + | | | | + |] | |
| 38 | | | | | | } | + | + | H | + | # | | | | + | 1 | |
| 39 | | | | | | | # | 丰 | H | + | # | | | | 1 |] | |
| 40 | | | | | | Ì | 1 | 1 | | 1 | 1 | \vdash | | _ | 1 | | |
| 41 | | | | | | ļ | + | - | | + | # | H | | 7 | - | | |
| 42 | | | ļ | | | ŀ | + | + | | + | + | Ħ | | \dashv | 1 | | |
| 43 | stu. | | | | | | + | + | | + | ‡ | | | 7 | # | İ | |
| 44 | ** - | \$ | | | | } | # | | | # | 1 | | | 1 | | | |
| 45 | 2000 | | | | | - | + | | H | +- | + | ┼┤ | \dashv | + | + | . ; | |

| | 1.00 | OF | D.C | | | _ | | 10 | _ | | | | | _ | | | | SHEET |
|--------------------|--|------------------|-------------|----------------|---------------------------|----------|-----------|-----------|-------------|-------------|------------|--------|-----------|--------------------|----------|----------|-------------|-------------------|
| Ŀ | | | טם | <i>Γ</i> | 7117 | | | | | | | | | | | | | <u>i</u> 0F 2 |
| | OJECT CABOT, CABOT & C.C.&F. WESTERN DEVELO | | 20. | TN | ic. | S | JRI | | | | | ATI | ON | | - | _ | DATE | 0F BORING 8-18-72 |
| | SHELL CHEMICAL PLAN | | | | | | | | 37 | | 7 ' | | | | | | | 8-18-72 |
| TY | PE & DESIGNATION OF DRILL S | AMPLES Distur | \ 5ec | | | H | A M | ME! | R | 11 |) S | | | | O, | EF | TH T | WATER |
| | 18" Bucket Auger | Undist | irbe | į | | | | | | | | 3 | 0" | | | | No | one |
| FACE | | | | IVAL | PENETRATION RESISTANCE | | | | | | | | | | | | IIT PCF. | |
| DEPTH FROM SURFACE | S. 455:516.7.4. | | SYMBOL | SAMPLE INTERVA | ANC | _ | 1 | | | | | | | | | ٦ | Z ı | |
| 5 | CLASSIFICATION OF MATE (in feet) | RIALS | X M | 2 | VET! | L | | | 015 | TUR | | ONTI | ENT | | | ᆜ | DRY U | |
| 1430 | | | S | SAU | PEI | | | . * | | 一 | • | HAT. | _ | LL | ,0 | | A P | |
| | LOCATION: Refer to P | late No | ٠. | | | | | | | | | | | | | | | |
| | SURFACE GRAVEL: loose | | | Π | | | | | | | \Box | T | I | Τ | | | | -dry |
| | SILTY SAND: fine sand hard, dark brown clay | | | | | | _ | _ | 4 | 4 | 4 | 1 | \perp | L | | _] | | -dry to |
| 2 | (broken fragments), m | | | | | H | \dashv | + | 4 | \dashv | + | + | + | + | H | \dashv | | moist |
| | ceous, red (SM-SC) | | | | | | | 1 | | \sqsupset | 工 | I | 1 | I | | | | |
| 3 | | | | | | | - | \dashv | 4 | \dashv | + | + | + | + | \vdash | { | | -moist |
| 4 | gradational color cha to brown | inge | SS | \dagger | | | | • | 7 | .3 | ,† | + | \dagger | + | H | _ | 116 | · |
| 5 | • | | | \sqcup | | | | \Box | 4 | | T | 1 | 1 | \bot | | | | |
| 1 | | | | | | - | - | \dashv | \dashv | + | + | + | + | ╁ | H | _ | | |
| 6 | | | | | | | 口 | | \exists | | | | 1 | | | | | |
| 7 | | | | | | \vdash | | \dashv | 4 | + | + | + | + | ╀ | - | - | | |
| | • | : | | | | | | 1 | | 士 | | | 土 | 上 | | | | |
| 18 | • | | | \coprod | 3.0 | | | + | 4 | 1 | 1 | 4 | \perp | $oldsymbol{\perp}$ | | _ | | |
| 9 | | | SPT | Н | 10 | Н | - | | 7 | 3 | + | ╁ | ╁ | + | H | - | | -moist |
| 10 | | | - | Д | 15 | | | \Box | | | 1 | | I | | | | | |
| | | | | П | | \vdash | - | + | \dashv | - | + | + | + | ╬ | H | _ | | |
| 皿 | SAND: fine to medium | sand, | | | | | | 士 | | j | 土 | 士 | 土 | 士 | 口 | | | |
| | micaceous, numerous s clay lumps, brown (SP | ilty | | | | Н | - | \dashv | 4 | | 4 | + | + | + | H | - | | |
| | wembal wrown (or | ′ | | | | H | | \dashv | - | _ | _ | + | 1 | + | | | | |
| 13 | | | | Ц | | П | \exists | 1 | \exists | \exists | 7 | 1 | T | I | П | | | |
| 14 | | | В | $\ \ $ | | \vdash | • | (7 | + | + | + | + | + | + | H | | | -moist to |
| | | | | П | | | 二 | \supset | 1 | | 士 | 丁 | 工 | 1 | | | | dry |
| 15 | | | | П | | | - | \dashv | - | + | + | + | + | + | \vdash | | | |
| 16 | | | | | : | | 士 | 士 | _ | | 士 | 士 | 士 | | | | | , |
| 17 | • | | | | | | \exists | \dashv | \Box | \Box | 4 | \bot | Ţ | $oldsymbol{\perp}$ | | _ | | } |
| 鬥 | | | : | | | H | + | + | + | \dashv | + | + | + | + | H | - | | |
| 18 | | | | $\ \ $ | | | 二 | | 1 | | 士 | 丁 | 工 | \perp | 口 | | | |
| 19 | color change to light | brown | | H | | | \dashv | - | + | \dashv | + | + | + | + | H | | | |
| H | • | | SS | | | | _ | | (1 | 4) | + | 1 | 士 | + | | | 116 | moist |
| 20 | | | | П | | | | | | | | 1 | I | \prod | | | L | <u> </u> |
| π. Φ. δ | A.FOR# - 15 | | | | | | | | | | | | | | BC | RI | NG N | 018 |

PLATE NO.

| URFACE | | | ۲ | BC |) F | RIN | G | 1 | 8 | | | | | | | | | | | HEE OF | |
|--------------------|-------------|--------------------------------|---|--------|-----------------|---------------------------|------------------------|----------------|----------|--------------|----------|-----------|-----------|---------------|-----------|---------|----------|-------------|------|---------------|---|
| DEPTH FROM SURFACE | CLASSIFIC. | ATION OF MATERIAL (in feet) | S | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | |)) (1,0 | A | STU 2,0 | | CON | | | 5,0 | | DRY UNIT | WEIGHT-PCF. | | | |
| 20 | | | | | | | _ | | | | | | | | | | | | | | |
| 21 | SAND: (CO | ntinued) (SP) | | | | | | - | H | F | | \exists | \exists | - | \exists | Ŧ | | | -mo: | ist | |
| 22 | | | | | | | | 1 | - | - | | 4 | _ | 7 | 7 | 1 | | | | | |
| 1 1 | (ho | omogeneous) | | | | | | 1 | 1 | 上 | | \exists | \exists | \dashv | \perp | 1 | | | | | |
| 23 | | | | | | | | | | 上 | | | 1 | _ | 1 | | | | | | |
| 24 | | • | | В | ╫ | | $\left \cdot \right $ | + | + | \downarrow | | \dashv | \dashv | - | + | + | | | | | |
| 25 | TOTAT. | DEPTH 25.0' | | В | \coprod | | | 1 | 1 | † | П | \dashv | 7 | 1 | _ | + | | | | . | |
| 26 | 1011111 | | | | | | | 1 | 1 | - | | 7 | # | 7 | # | 1 | | | | | |
| 27 | • | | | | | | | | | | | | 1 | \exists | # | | | | | | |
| 28 | | | | | | | | | \pm | | | | 1 | \exists | + | | | | | | • |
| 29 | | | | | | - | | _ | \vdash | - | | 1 | _ | + | + | \perp | | | | | |
| 30 | | | | | | | | - | \vdash | | | \dashv | - | \dashv | 7 | - | | | | | |
| | | | | | | | - | 1 | T | | | _ | 7 | | 7 | | | | | • | |
| 31 | | | | | | | | | 上 | | | | _ | | # | 1 | | | | | |
| 32 | | | | | | | | 士 | | | | 1 | | \exists | \pm | | | | | | |
| 33 | 4, | • | | | | | \dashv | + | ╀ | - | \dashv | - | \dashv | - | + | + | | | | | |
| 34 | | | | | | | | - | F | F | | - | 7 | - | 7 | - | | | | | |
| 35 | | | | | | | 7 | - | Ŧ | - | | _ | 7 | \dashv | 7 | 1 | | | | | |
| 36 | | | | | | | _ | # | | | | | | 1 | 1 | | | ļ | | | |
| 37 | | | | | | | \pm | + | 上 | | | \dashv | 1 | \Rightarrow | \pm | 1 | | İ | i | | |
| 38 | | · | | | | | \dashv | 1 | - | | | _ | + | - | 1 | | | | | | |
| 39 | | • | | | | | 7 | Ŧ | F | | - | - | 7 | - | 7 | F | | | | | |
| | | | ا | | | | 7 | 7 | F | | | 1 | 1 | _ | 7 | 1 | | | | | |
| 40 | | | } | | | | 1 | \pm | | | | + | 1 | \downarrow | # | | | | | | |
| 41 | | | | | | | 1 | \pm | | | | 1 | 1 | 1 | 1 | - | | | | | |
| 42 | | | | | | } | | + | - | H | \dashv | \dashv | 4 | - | - | - | | | | | |
| 43 | | | | | | } | 7 | + | | H | | 7 | 1 | 7 | 7 | 1 | | | | | |
| 44 | | • | | | | ļ | 1 | # | | | | + | 7 | 1 | # | - | | | | | |
| 45 | A FORM- 164 | | | | | | <u> </u> | 土 | | | | 士 | 1 | 士 | 土 | + | | | | 18 | |

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| | | UNSU. | | . 10 12. | 101. | 122 | | • | | | | , | ייחן | . /_ | |
|--------------------|---|----------------|--------|--|-------------------|------------|---------|--------------|------------------|------------|-------------------|--------------------|---------------------------|-----------|--|
| | . LOG C | RIN | G | 19 |) | | | | | | 4 j | SHEET | | | |
| | ROJECT CABOT, CABOT & FOR | | | | SURFACE ELEVATION | | | | | | | | DATE | OF BORING | |
| İ | C.C.&F. WESTERN DEVELOPME SHELL CHEMICAL PLANT P | INC. | | 39 | 9.9 | 9 • | | | | | RTED | 8-18-72 8-18-72 | | | |
| TY | PE & DESIGNATION OF DRILL SAMPL | ES | | | HAP | MMER | | | | | | | | O WATER | |
| | | sturb distu | | | | 140 fa: | | | | 0 " | | | None | | |
| 12 | | T | | | - | | | | | <u> </u> | | L | u: | · · · | |
| DEPTH FROM SURFACE | | | ۲ ۲ | PENETRATION RESISTANCE | | | | | · | | | | DRY UNIT WEIGHT - PCF. | | |
| M 0 M | CLASSIFICATION OF MATERIAL | .s | SYMBOL | TR/ | | | | | | | | | S E | | |
| H | (in feet) | | ≻s | ENE | | PL A | | | CONT. | | W. | | 18 m | | |
| 8 | | <u>l.</u> | | 2 a E | <u> </u> | 1.0 | 2.0 | | | 4,0 | 5, | <u> </u> | | | |
| <u> </u> | LOCATION: Refer to Plate | e No. | | | , , . | 1 1 | | Ţ | , , , | | | _ | | ļ | |
| - | SILTY SAND: fine sand, clayey, dark brown (SM-So | ci | | | - | ++ | + | - | - | + | ╁┤ | + | 1 | -moist to | |
| | The state of the state of the state of | ~ | | | 口 | | 士 | | 口 | 1 | 口 | 上 | 1 | dry | |
| 2 | SANDY CLAY: silty, fine | | | | 1 | + | + | | ╀ | + | +- | - | - | | |
| 3 | sand, limonite staining, | ** 1 | | | | + | 十 | - | <u> </u> | + | H | + | 1 | -moist | |
| 4 | reddish brown (CL-ML) | | SS | · | | | \perp | | | | \Box | L | 122 | 10136 | |
| -4 | SILTY SAND: clayey, fine sand, numerous silty clay | | | | | + | + | - | \vdash | | ++ | | 1 | | |
| 5 | lumps, limonite stained, | | | | 口 | | \pm | | | 上 | 廿 | | 1 | | |
| 6 | brown (SM-SC) Note: silt & clay content | _ | | | | ++ | + | ┼ | - | | 1-1 | \perp | - | | |
| | variable | | | | H | ++ | 十 | + | | ╅ | ╫ | \dashv | 1 | | |
| 7 | CLAYEY SAND: silty, fine | | | | | | T | | \Box | | \Box | | 1 | | |
| 8 | sand, micaceous, brown (SC-SM) | | | | - | ++ | + | ╀ | ┝┼ | | + | \dashv | 1 | · | |
| \Box | | | | 5 | | | 土 | | | 土 | | | 1 | | |
| 9 | | s | PT | 10 | | + | 4 | 力 | | + | + | | - | -moist | |
| 10 | | | | 13 | ++ | + | + | + | | + | + | + | 1. | | |
| | SILTY SAND: clayey, mica- | | | | \Box | | I | | | T | П | |] | | |
| | ceous, fine sand, brown (SM-SC) | | | | - | ╂┼ | + | + | - | + | ╫ | - | ┥ | | |
| 12 | (33-20) | | | | 世 | | 土 | L | | | | | 1 | | |
| 13 | | | | | - | 11 | + | ╀- | - | - | ╀╌╂ | + | 4 | | |
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| 14 | ; | } | | | 口 | | I | | \Box | T | \Box | | | moist | |
| 15 | | | | | - | ++ | + | +- | ╁ | + | $oxed{H}$ | + | - | | |
| | · | | | | 世 | 廿 | 土 | | 口 | 土 | \Box | | 1 | | |
| 16 | color change to liet | | | | 1 | \prod | 1 | \vdash | | 4 | ╁┩ | - | - | | |
| 17 | color change to light brown & limonite staining | g | | | H | + | + | ╁ | \vdash | + | + | + | -{ | | |
| | | - | | | | П | I | | | I | П | |] | | |
| 18 | | <u> </u> | | - | 4 | 11 | + | \vdash | $\vdash \vdash$ | + | ╁╂ | | - | | |
| 19 | : | s | PT | 11 | - - | - | 11 | 7) | | + | $\dagger \dagger$ | + | 1 | | |
| | · | | | 13 | 口 | | | | | I | П | 1 |] | | |
| 20 | A. FOR# - 16 | | | <u> </u> | | 1 | 1_ | ١. | | | | | ING P | NO. 19 | |

BORING NO. 19 PLATE NO. 49

| | PROJECT 7298 | LOG | OF | ВС | PENETRATION TESISTANCE | G | 19 | | | | | | SHEET 2 OF <u>2</u> |
|--------------------|----------------------|---------------------------------------|-----------------|----|------------------------|---|------|-------------|--|--------------|------------|-------------------------|------------------------|
| DEPTH FROM SURFACE | | CLASSIFICATION OF MATERIALS (in feet) | | | | | MOIS | TURE 0 3 | NAT. | — ₽ į | L 8,0 | DRY UNIT WEIGHT-PCF. | |
| 20 | | | | | | | | | | | | | |
| 21 | SILTY SAN (SM-SC) | D: (continued |) | | | | | Ŧ | | \prod | + | - | -moist |
| 22 | , , | | | | | | | + | | | | - | |
| 23 | | | | | | | - | + | H | | 1 | - | |
| 24 | | | | | | | | | | | 1 |] | |
| 25 | | | | | | | | | | | | | |
| 26 | TOTAL | DEPTH 25.0' | | _ | | | | - | H | | \prod | - | |
| 27 | | | | | | | | | | H | |]. | |
| 28 | | | are gradi | | | | | \perp | | | |] | |
| 29 | | | 1 tang () 1 | | | | | | | | | | |
| 30 | | • | - 1 m | | | | | \pm | | | \prod | 1 | |
| 31 | | \$ | - Pa | | | | | - | | | + | 1 . | |
| 32 | | | | | | | | \perp | | | + | | |
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| 34 | | | | | | | | + | | | | 1 | |
| 35 | | | | | | | | | | # | # | | |
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| 37 | | | | | | | | | | | | 1 | |
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| 41 | | | į | | | | 11 | | | | \ddagger | - | |
| 42 | | | | | | | # | | | | | | |
| 43 | | ŗ | | | | | | # | | | | | |
| 44 | | • | | | | | # | | | | | 1 | |
| 45 | FORM - 16A | | | | | | | | | | | ING N | . 19 |

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| | . LO | G OF | BC |) F | RIN | G | 2 | 0 | | | | | | SHEET <u>1</u> of <u>2</u> | | |
| | OJECT CABOT, CABOT | | | | - | SU | RFAC | ΕΕ | LEV | ATIO | N | | DATE | OF BORING | | |
| (| C.C.&F. WESTERN DEVE | | | | c. | | | 32. | 5 ' | | | | RTED | | | |
| TY | SHELL CHEMICAL PLE PE B DESIGNATION OF DRILL | SAMPLES | SKII | | | HAI | MME | ₹ | | | | | | 8-21-72 O WATER | | |
| | 18" Bucket Auger | Distu | ched | / | | | 14 | | bs | | | " | None | | | |
| - | To Bucket Ruger | Undis | turb | ed | | | fa | <u> 11i</u> | ng | 30 | ** | <u> </u> | | 10116 | | |
| DEPTH FROM SURFACE | | • | ٦ | SAWPLE INTERVAL | PENETRATION RESISTANCE | | 1 | | 1_ | | L | 4 | DRY UNIT WEIGHT - PCF. | | | |
| 0 | CLASSIFICATION OF MA | TERIALS | SYMBO | | STA | | | | | | | | SH | | | |
| Ē | (in feet) | | SY | 14 | ESI | | PL & | | AE C | ONTER | T % | | EIG | | | |
| 8 | · | | <u> </u> | | م ه | | 1,0 | | | | 0 (| 10 | 3 | <u> </u> | | |
| - | LOCATION: Refer to | Plate No |) . | | | 1 | 1 - 1 | | 1 1 | | · · | 1 1 | | | | |
| 1-1 | SAND/GRAVEL: loose SILTY/SANDY CLAY: f: | ine sand. | | | | $\vdash \vdash$ | ++ | + | ╀┼ | \dashv | | - - | 1 | -moist | | |
| | fill material, soft | | | | | | | 工 | | | 工 | |] | • | | |
| 2 | brown (CL-ML) | | | | | \prod | + T | - | - | - | | 1-1- | 4 | | | |
| 3 | | | | | | ╫ | + | + | ╁┼ | | - | ++ | 1 | | | |
| | | | ĺ | | | | | | | | | | 1 | ' | | |
| 4 | | file to entress together | | | | | + | | | | | - | 4 | | | |
| 5 | | or many | | П | | \vdash | ++ | +- | ++ | + | $\vdash\vdash$ | ╂┼ | - | | | |
| | CLAYEY SAND: silty, | | | Н | | 世 | | 土 | | 工 | | | | -moist | | |
| 6 | | vn · | | \coprod | | П | \perp | | | 1_ | | |] | | | |
| 7 | (SC-SM) | and an amount of | SS | | | \vdash | ╀ | 42 | ∮} | | $\vdash \vdash$ | ╂-┼- | 111 | | | |
| | • | 1,750.5 | | \forall | | | | | | | | | 1 | moist | | |
| B | SILTY SAND: clayey, | fine | | | | | | _ | | | | | 1 | | | |
| 9 | sand, brown (SM-SC) | | | | | \vdash | ++ | + | H | +- | | 1- | 1 | | | |
| | | | • | | | 口 | | 工 | | | | | 1 | | | |
| 10 | | | | | | - - | + | \bot | \coprod | - | \Box | \bot | 4 | | | |
| | | | | | | + | ++ | 十 | + | + | \vdash | ++- | 1 | | | |
| | | | | | | | | | П | | | | 1 | | | |
| 12 | | | | | | ┝┼ | + | + | ++ | + | - - | + | - | | | |
| 13 | | | | | | | + | + | | _ | $\vdash \vdash$ | <u> </u> | 1 | | | |
| | SILTY SAND: fine san | | | П | 5 | | | | \prod | | | |] | | | |
| 14 | ceous, brown, clayer (SM-SC) | 7 | SPT | H | <u>8</u> 8 | $\vdash \vdash$ | | 13 | ╀ | | - - | | | -moist | | |
| 15 | (011, 00) | | | + | 0 | | 1 | 1 | | 1 | | | 1 | | | |
| | | | | | | | П | 1 | П | 7 | | | | | | |
| 16 | | | | | | - | +-+ | + | ╀┼ | + | - | ╂╌┼╌ | 4 | | | |
| 17 | | | | | | | 1 | | | | | | 1 | | | |
| | | | | | | | П | \perp | П | \perp | | П |] | | | |
| 18 | | | | | | | ╂╾┼ | +- | H | + | \vdash | ┼┼- | - | | | |
| 19 | : | - | | | | - | † † | + | † † | + | | | 1 | | | |
| | · | | | | | | \Box | 1 | П | | | \Box | ¬ - | | | |
| 20 | A. FORW - 16 | | | Ц | | Щ | للل | | | | | | ING 1 | 10. 20 | | |
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PLATE NO.

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|-------------------|---------------------------------------|---|-------------|-----------------|---------------------------|-----------|---------------|----------------|--|--------------|-----|-----------|-----------|---------------|---------------------|-------------------------|----------|-----|------------|---|
| | PROJECT 7298 | LOG OF | ВС |) [| RIN | G | ; | 20 |) | | | | | | | | | | EET OF | |
| DEPTHFROM SURFACE | CLASSIFICATION OF MATERIALS (in feet) | | | SAMPLE INTERVAL | PENETRATION RESISTANCE | | | L A | 115 T | | CON | | | | | DRY UNIT WEIGHT-PCF. | | • | | |
| 20 | | | , | | | | | | | , | .—, | | | | | | | | | |
| 21 | ceous, fin | D: clayey, mica- ne grained, stained, brown | | | | | | | - | | | | | | + | | | | | |
| 23 | | | | - | | | - | + | + | + | | | | | + | | ļ | vet | | • |
| 24 | • • | | SS | | | | 7 | _ | 1 | F | П | • | 3 | ') | 1 | 97 | | | ٠ | • |
| 25 | TOTAL. | DEPTH 25.0' | - | \dashv | | | \dashv | 7 | + | <u> </u> | | | _ | 7 | + | | +- | | | |
| 26 | 20 | | | | | | 7 | 1 | # | F | | | | 1 | # | | | | | |
| 27 | | | | | | | \dashv | + | + | _ | | | | - | - | | | | | |
| 28 | | | | | | | \exists | | # | 1 | | | _ | 1 | 1 | | | | | |
| 29 | | | | | | | \exists | 1. | ‡ | | | | | 1 | 1 | | | | | |
| 30 | | | | | | | 1 | | # | 上 | | | | # | # | | | | | |
| 31 | | | | | | | | + | 1 | | | | | # | 士 | | | | | |
| 32 | | | | | | | | # | + | - | | | \exists | \dashv | $^{\pm}$ | | | | | |
| 33 | | | | | | | | \pm | \pm | | | | | \Rightarrow | 上 | | | | | |
| 34 | | | | | | | | 1 | 1 | | | | | 士 | 士 | | | | | • |
| 35 | | | | | | | | + | 1 | | | | | \downarrow | \pm | 1 | | | | |
| 36 | ; | | | | | | _ | 1 | \perp | | | | | 1 | 1 | | | | | |
| 37 | | | | | | | $\frac{1}{2}$ | 1 | 1 | - | | \exists | | $\frac{1}{2}$ | \perp | | | | | |
| 38 | | | | | | | 1 | + | - | | | _ | | \pm | _ | | | | | |
| 39 | | • | | | | | - | | $ar{\pm}$ | - | | - | - | $\frac{1}{1}$ | | | | | | |
| 40 | | | | | | - | 7 | $\overline{+}$ | F | | | \exists | \exists | - | $oldsymbol{\Gamma}$ | | | | | |
| 41 | | | | | | | - | | F | | | | | - | | | | | | |
| 42 | | | | | | \exists | 1 | $oxed{\top}$ | | | H | 7 | - | 7 | | | | | | |
| 43 | | | | | | 7 | 7 | + | - | | H | 7 | 7 | 7 | | | | | | |
| 44 | | * | | | | 7 | 7 | 1 | F | | | 7 | - | 7 | + | | | | | |
| 45 | | | | | | 7 | + | + | F | H | | _ | _ | + | - | | | | • | |
| | L. FORM - ISA | | | Ц. | | | | | ــــــــــــــــــــــــــــــــــــــ | لــــا | | 1 | | | | ING I | <u> </u> | |) <u>(</u> | |

| | LO | G OF | В |) | RIN | G | | 21 | | | | | | | | | SHEET 1 OF 2 | | |
|--------------------|---|--------------------|--------|-----------------|---------------------------|------------------------|----------|-----|-----|---------|-----------------|--------------------------|----------|------------------|------------------------------------|--------------|------------------------------|--|--|
| | OJECT CABOT, CABOT 8 | | | ~. | | SI | JRF | ACI | ΞΕ | LE | VA ^T | rio | N | | DATE OF BORING | | | | |
| , | C.C.&F. WESTERN DEVEI SHELL CHEMICAL PLA | | | | ıc. | | | 3 | 32. | 5 | • | | | | STARTED 8-21-72 COMPLETED 8-21-72 | | | | |
| ΤY | TYPE & DESIGNATION OF DRILL SAMPLES | | | | | н | | ÆR | | | | | | | DEPTH TO WATER | | | | |
| | 18" Bucket Auger | Disturi Undistu | | | | 140 lbs falling 30" | | | | | | | | | None | | | | |
| URFACE | | `\ | ر . | ERVAL | TION | | | | | | . | المحا | | | _ _ | PCF. | | | |
| DEPTH FROM SURFACE | CLASSIFICATION OF MAT (in feet) | TERIALS | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | | | | | 1 | | | | _ × | EIGHT - PCF. | | | |
| DEPTH | (III Teet) | . 1 - 2 | જ | SAMP | PEN | | | | 210 | | NA | TEN' T. | - | 8 ₁ 0 | ٥ | <u> </u> | | | |
| | LOCATION: Refer to | Plate No | • | | | | | | | | | | | - | | | | | |
| | SAND/GRAVEL: loose | l es este | | | | $\vdash \mid$ | + | + | + | - | - | $\vdash \downarrow$ | | + | \dashv | | -moist | | |
| | SANDY CLAY: silty, d | ark | | | | Hi | + | + | + | + | + | H | + | + | \dashv | | | | |
| 2 | DIONII (CU-PIU) | | | | | | | | 工 | | | | 士 | | | | | | |
| 3 | /r | \ | İ | | 1 | | 4 | + | + | ┼- | - | \square | \bot | \sqcup | | | | | |
| | Harany | 1082 | | 1 | | \vdash | \dashv | + | ╁ | ╁ | \vdash | Н | \dashv | H | \dashv | | • | | |
| 4 | JAN 7 | 1302 | | 1 | | | | 土 | I | | | | | | | | | | |
| 5 | 1 | | | | | - | - | + | + | +- | ╀ | \vdash | | 1- | - | | | | |
| | | 0.5 (1.0.00) | | | | | | 1 | | | | | 士 | | | | -moist | | |
| 6 | 6.2.11 | | | | | | 1 | 4- | 1 | F | <u> </u> _ | | - | | | | | | |
| 7 | color change to redd | lish | SS | | | H | \dashv | • (| †3 | - | ╁ | | +- | + | \dashv | • | | | |
| | brown, scattered peb | • | | | | | \Box | I | 1 | I | | | | \Box | | | | | |
| 8 | to 1/8" | -, | | ١ | | ┞┤ | \dashv | + | + | ╀ | +- | \vdash | - | ╂┤ | H | | | | |
| 9 | | | | İ | | | \perp | 土 | | | | | 1 | | | | | | |
| 10 | | | | | | | 4 | 4 | - | - | L | Щ | | | | | } | | |
| 10 | | *** | | | | \vdash | \dashv | + | + | +- | \vdash | \vdash | - | H | | | | | |
| 11 | | | | ١ | | | _ | 1 | 1 | ‡ | | | | | | | | | |
| 12. | | | | | | \vdash | \dashv | - - | + | + | \vdash | \vdash | + | H | H | | | | |
| | | | | | | | _ | | 士 | \perp | | | 士 | | | | | | |
| 13 | SILTY SAND: clayey, | mica- | | | | | \perp | Ŧ | Ŧ | \bot | | | \Box | \prod | | | moist | | |
| 14 | ceous, fine sand, co | lor | | | | \vdash | \dashv | + | + | +- | + | H | + | + | H | | İ | | |
| | change to brown (SM- | | · | | | | 1 | 1 | 1 | T | | | | | | | | | |
| 15 | | | | | | H | + | + | + | + | + | $\left\{ \cdot \right\}$ | + | H | H | | 1 | | |
| 16 | | | | | | | \perp | 1 | 1 | | | | _ | | | | | | |
| 17 | | | | | | - | - | + | + | +- | + | ┤┤ | - | + | Щ | | 1 . | | |
| • | SAND: silty, scatter | ed clay | | | | H | + | + | + | + | + | | + | + | H | | moist to dry | | |
| 18 | inclusions, micaceou | | | \perp | | | \Box | 1 | T | 1 | L | П | \perp | | | | lary . | | |
| 19 | brown (SW-SP) | | SS | | | ┞┤ | • (| 7) | + | +- | +- | ┤┤ | + | H | H | | | | |
| | • | | | + | | | _ | _ | | 1 | | | _ | \prod | | | | | |
| 20 | | | | Ţ | | | I | | | | | | | | 77 | | L | | |
| | A.FORM - 16 | | | | | | | | | | | | | | RIN ATE | | 0. <u>21</u> 0. <u>51</u> | | |
| | | | | | | | | | | | | | | - (| . ~ ! [| . N | · | | |

| - | PROJECT 7298 | LOG OF | В | 0 | | G | 6 | 21 | | | | | | | | SHEET 2 OF 2 |
|--------------------|-----------------|---|------|---|-----|-----------|--------------|----------|---|-----------|--------------|---------|-------|-----------|-----------|-----------------|
| DEPTH FROM SURFACE | CLASSIF¶C | CLASSIFICATION OF WATERIAR PENETRALION RESIDENT TANCE CONTENT OF SYMBOL | | | | | | | | | | | | | | |
| 20 | | | ·· · | | • | , | | , | • | • | | | | · · | _ | |
| 21 | SAND: sili | ty, scattered class, fine sand, | Y | | | | \pm | | | | + | \perp | \pm | \coprod | _ | -moist |
| 22 | micaceous | , brown (SW-SP) | 4- | | | | + | - | H | | - | - | + | \prod | | |
| . 1 | | | | | | H | \mp | + | | | 1 | 7 | 7 | 1 | 7 | |
| 23 | - | | | | | | 1 | 1 | | | + | # | # | | | |
| 24 | | | | | | | \pm | | | | \pm | \pm | _ | | _ | |
| 25 | ሞርምል፣. | DEPTH 25.0' | + | + | ļ . | | + | - | | | 1 | + | + | H | - | |
| 26 | 10111 | DEFIN 23.0 | | | | | 1 | 1 | | | 4 | + | - | 1. | | |
| 27 | | | | | | | # | 1 | | | | ‡ | 1 | | | · |
| 28 | | | | | | | \pm | _ | | | 1 | 1 | \pm | 廿 | | |
| 29 | | | | | | + | + | - | | \vdash | + | + | + | - | - | |
| 30 | | | | | | | + | + | | | 4 | + | # | | 7 | |
| | | | | | | | # | + | | | + | + | # | | 1 | |
| 31 | | | | | | | \pm | - | | | 1 | \pm | \pm | \coprod | _ | |
| 32 | | | | | | - | + | + | H | | + | + | + | + | - | |
| 33 | • | | | | | | 1 | - | | | 4 | 7 | 1 | \prod | 7 | |
| 34 | | | | | | | # | ‡ | | | # | # | # | | 1 | |
| 35 | | | | | | \exists | # | \pm | | | \downarrow | \pm | 1 | | _ | |
| 36 | | | | | | | 1 | <u> </u> | | | | + | + | + | ┨. | |
| 37 | | | | | | 4 | + | - | | | - | 1 | - | | 7 | |
| | | | | | | 1 | # | # | | | 1 | 1 | # | | | |
| 38 | | | | | | + | 士 | | | | \perp | \pm | \pm | | \exists | |
| 9 | | | | | | + | + | + | | - | + | - | - | H | 7 | |
| 10 | | | | | | 1 | 1 | 1 | | | - | 1 | 1 | \prod | 7 | |
| 山 | | | | | | # | † | 1 | | | Ì | † | + | | _ | |
| 12 | | | | | | \pm | \pm | | | \exists | + | \pm | \pm | | _ | |
| 13 | | | | | | - | 7 | F | | _ | + | 7 | - | \prod | 7 | |
| 14 | | • | | | | 1 | # | # | | \exists | + | + | # | \Box | 7 | |
| 45 | • | | | | | 1 | 土 | | | | \pm | 士 | \pm | | _ | |

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| | LO | G OF | ВС |) | RIN | G | 2 | 22 | - | | | | | | SHEET 1 OF 2 | | |
|------------------------|--|----------------|---------|-----------------|---------------------------|--|---------|-----------|---------------------|----------|-----------|----------|----------------|--|-----------------|--|--|
| | OJECT CABOT, CABOT | | | | | su | RFA | CE | E٤ | E VA | TIO | N N | 1 | DATE | OF BORING | | |
| 1 | C.C.&F. WESTERN DEVE | | • | | 1C. | 1 | | 3 | 1.6 | . 1 | | | | ARTED | 8-22-72 | | |
| | SHELL CHEMICAL PLANT PROP | | | | ···· | | | | | , | | | _ | | 8-22-72 | | |
| 114 | TYPE & DESIGNATION OF DRILL SAMPLES | | | | | HA | MM | | 1b | | | | DE | DEPTH TO WATER | | | |
| <u>_</u> | 18" Bucket Auger | Distu Undis | | | | | | | lin | | 30 | 11 | | | one | | |
| DEPTH FROM SURFACE | | | | SAMPLE INTERVAL | PENETRATION RESISTANCE | | | _ | 1 | , | | | | UNIT IT - PCF. | | | |
| 1 2 | CLASSIFICATION OF MA | TERIALS | SYMBOL | HT | RAI | | | | | | | | | J S L | | | |
| = | (in feet) | | X > | 2 | 12 E | | | MOIS | TURE | COA | 7.5 % | T % | <u> </u> | DRY U | | | |
| 5 | , | | S | N. | RES | | | <u></u> | | - NA | ١٢. | - LL | | WE. | | | |
| ۳ | | | <u></u> | <u></u> | L | l | 1,0 | | | 3,0 | | | 10 | ــــــــــــــــــــــــــــــــــــــ | <u></u> | | |
| ļ, | LOCATION: Refer to | Plate N | ٥. | _ | , | | | | | | , , | | | -, | | | |
| | SAND/GRAVEL: loose | | 1 | | | - | 4- | - | $\vdash \downarrow$ | + | ╌┨ | | ╂-┼- | 4 | -moist | | |
| $\vdash \vdash \vdash$ | CLAYEY SAND: silty, | ر مامر ج | | | | $\vdash \vdash$ | + | ╁ | ╀ | + | ┝╌╏ | + | ╁-┼- | \dashv | | | |
| 2 | organics, fine sand brown (SC-SM) | , dark | | | [| $\vdash \vdash$ | ╅ | +- | \vdash | + | H | | ++ | - | | | |
| | Brown (SC-Sr) | | | | | | 1 | 1 | \sqcap | + | | | 11 | ┪ | | | |
| 3 | | | Ì | | 1 | | 工 | | | | | | |] | 1. | | |
| | | | | | | \Box | \perp | | | | | | П | | | | |
| 4 | | - • - | <u></u> | | | | 1. | | | _ | ! | | 1-1- | 4 | | | |
| 5 | color change to redo | lish | SS | | | $\vdash \downarrow$ | 4 | 40 | 4) | + | ╀╌┨ | | ╂╌┼ | 1116 | -moist | | |
| ~ | brown | | | ╀ | | \vdash | + | - | $\vdash \vdash$ | ╁ | + | | ╁┼ | - | | | |
| 6 | | | | | l | - | + | + | | + | \Box | + | 1 + | 1 | | | |
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| 7 | •• | | į | | | \Box | \perp | oxdapprox | | I | | | П | 7 | | | |
| 8 | | | 1 | | | $\vdash \downarrow$ | + | \vdash | $\vdash \downarrow$ | - - | ┦ | | ╀┼ | - | | | |
| 누믝 | | | - | 1 | | ┝┼ | ┿ | - | $\vdash \vdash$ | + | ╀┤ | | ╂╌┼ | ┥ | | | |
| 9 | | | | | | H | + | +- | \vdash | + | ╁┤ | + | ╂┼ | ┪ | | | |
| | | | | | | H | 十 | T | \sqcap | 1 | | | | 7 | | | |
| 10 | • | | | | | | | | | | | | | | | | |
| | | | | | | - | _ | <u> </u> | \sqcup | \bot | | + | ++ | 4 | • | | |
| 1: | SILTY SAND: fine san | 24 | 1 | | | ₽+ | + | - | $\vdash \vdash$ | + | \vdash | + | | - | -moist • | | |
| 12 | brown, slightly clay | | | | | $\vdash \vdash$ | + | - | $\vdash \vdash$ | +- | ┤┤ | \dashv | 1 + | ┥ | WOTEL. | | |
| | (SM) | | | | | | + | | $\vdash \vdash$ | + | | | H | 1 | | | |
| 13 | | | | Ц | | | 工 | | | I | \square | | |] | | | |
| 1 | | | SS | П | | \prod | | (11 | ٦, | 4_ | \sqcup | | \prod | 4 | | | |
| 14 | | | ļ | arphi | ļ | H | 1 | 1 | $\vdash \vdash$ | + | H | | ╂- | ┥. | | | |
| 15 | | | | | | ┝┼ | + | +- | $\vdash \vdash$ | +- | ╁┤ | + | ++ | -{ | | | |
| | | | | | | H | + | 1 | + | + | \vdash | + | | 1 | | | |
| 16 | | | 1 | | | | | | | | | | |] | | | |
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| 17 | CTI MY (OT 1 VOV. C1 VO | e! | 4 | | | | 4- | 1- | $\vdash \downarrow$ | +- | igspace | | 1-1- | 4 | -moist | | |
| | SILTY/CLAYEY SAND: | | | $\ \ $ | | ┝┼ | + | - | | +- | ╀┦ | - | + | -{ | | | |
| 18 | sand, micaceous, sca hard clay inclusions | | | | | $\vdash \vdash$ | + | - | \vdash | + | ┼┤ | + | +-+ | \dashv | | | |
| 19 | brown (SM-SC) | ? <i>(</i> | | $\ \ $ | | $\vdash \vdash$ | + | + | + | + | + | + | + | ┥ | | | |
| | | | | $\ \ $ | | \vdash | + | | \vdash | +- | † † | | \Box | 1 | | | |
| 20 | | | <u></u> | | | | _ | | | <u> </u> | | _ | | 1 | | | |
| E C. A | A. FORM - 18 | | | | | | | | | | | | ВО | RING I | vo. <u>22</u> | | |

| PROJECT LOG OF B | 30RING 22 SHEET 2 OF 2 |
|---|--|
| CLASSIFICATION OF MATERIALS (in feet) | SAMBOL SAMPLE INTERVAL PENETRATION RESISTANCE O'S TOWN O'S O'S TANGE O'S TOWN O'S O'S O'S O'S O'S O'S O'S O'S O'S O'S |
| 20 | |
| SILTY/CLAYEY SAND: 21 (continued) | moist |
| SANDY/SILTY CLAY: fine sand, micaceous, brown | |
| (CL-ML) | |
| \$ 1 | SS (26) 93 |
| 25 | |
| TOTAL DEPTH 25.0' | |
| 27 | |
| 28 | |
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| 45 x. o.a A. FORM- 18A | |

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| | LO | G OF | BO |) F | RIN | G | | X | • | | | | | | | | SHEET <u>:</u> of <u>l</u> |
| | OJECT CABOT, CABOT & | | | | | SL | RF | ACE | Ει | . E \ | /AT | ION | | T | | | OF BORING |
| ' | C.C.&F. WESTERN DEVEL SHELL CHEMICAL PLA | | | | C. | | | 3 | 3. | 7 ' | | | | L | | TED | 8-22-72 0 8-22-72 |
| TY | PE & DESIGNATION OF DRILL | SAMPLES | | | | H4 | MN | ER | | | | | | | _ | | O WATER |
| | 24" Bucket Auger | Nor | 1e | | | | | N | one | 3 | | | | | | 1 | None |
| DEPTH FROM SURFACE | | | | W | N W | | | | | | | | | | | | |
| SU | 6: 400:F104T1011 OC 114 | | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | - | | | | | | | | <u> </u> | - | UNIT 1T - PCF. | |
| 1 | CLASSIFICATION OF MA (in feet) | IEHIALS | ¥. | 1 | VETI | | | MOI | 57 00 | | CONT | E 4 7 | * | ٠ | 4 | DRY UN | |
| 100 | , | | S | SAMP | PE | | | 2 | | • | HAT | | € | ,,0 | 1 | ō₩ | |
| | LOCATION: Refer to | Plate No | i divisione e | | , 4: | | - | | ٠. | | ., | | | | | | |
| | SANDY CLAY: fine sar silty, dark brown (C | | | T | | П | 7 | Ŧ | | | | T | T | П | \exists | | -moist |
| | sirty, dark brown (c | .101) | | | } | | + | | | | \exists | 士 | \pm | | | | |
| 2 | | | | | | П | \dashv | 1 | | | 4 | 1 | 4 | \square | _ | | |
| 3 | | | ļ | | } | | + | + | H | | - | + | + | +- | \dashv | | -moist |
| | SANDY CLAY: fine sar | | | | | | 1 | 1 | | | | 1 | | | | | MOISC |
| 4 | silty, reddish brown TOTAL DEPTH 4.0 | | - | + | | \vdash | + | + | - | | 1 | \dashv | ╬ | H | - | | |
| 5 | | | | | | | 1 | 1 | | | \Box | 1 | 1 | | \exists | | |
| 6 | | | | ı | | \vdash | + | + | ╀┤ | | \dashv | + | + | H | \dashv | | |
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| | | | Ì | | 1 | | 1 | | | | | 1 | 土 | | | | |
| 0 | | | | | | \vdash | + | + | | | | \dashv | + | $\left\{ \cdot \right\}$ | \dashv | | |
| 回 | • | | | | | | 1 | | | | | 1 | 士 | | | | |
| 12 | | | | | | \vdash | \dashv | + | - | \vdash | - | \dashv | + | H | \dashv | | |
| | | | | | | | | 士 | | | | 1 | 士 | | | | |
| 13 | | | | | } | \square | \downarrow | 1 | - | | | 1 | - | | \Box | | |
| 14 | • | | | | <u> </u> | | 1 | | | | | 1 | 士 | | | | |
| 15 | | | [| | (| | 4 | + | - | | | 4 | + | H | Ц | | |
| | | | | | | | _ | 1 | | Н | | + | \pm | | \exists | | |
| 16 | | | | | | - | 1 | \bot | | | | 4 | - | \square | П | | |
| 17 | | | | | | | + | \pm | - | Н | | + | + | H | H | | |
| | | | | | | | 1 | I | | | | 1 | I | П | | | |
| 18 | | | İ | | | \vdash | + | +- | - | Н | | \dashv | + | H | H | | |
| 19 | ; | | | | | 口 | 1 | | | | | \downarrow | 1 | \Box | 口 | | |
| 20 | | | | | | \vdash | + | + | - | | | + | +- | + | H | | - |
| | A. FORM - 10 | | | | · | L | | - | ٠ | | | | _1_ | | | | NO. 1X |
| | | | | | | | | | | | | | | ΡĮ | AT | Έ | NO. <u>53</u> |

| | LO | G OF | B |) F | RIN | G | | IΑ | | | | | | | | | SHEET . |
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| | C.C.&F. WESTERN DEVEL | | Ö., | IN | c. | Su | RFA | | | | ATIC | N | | ST | DAT | | OF BORING 8-22-72 |
| - | SHELL CHEMICAL PLA PE & DESIGNATION OF DRILL | | RTY | | | | | | 1 . 4 | | | | | | | | 8-22-72 |
| ' ' | 24" Bucket Auger | SAMPLES | | | | n A | MM | | 105 | | | | | ייי | PIN | | WATER |
| | 24 Bucket Auger | NONE | : | | | | | 1 | lon | ıе — | | | | L | - | _ | one |
| DEPTH FROM SURFACE | CLASSIFICATION OF MA (in feet) | TERIALS | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | | W 011 | | | ONTE | 1 | | | DRY UNIT | WEIGHT - PCF. | |
| 8 | LOCATION: Refer to | Plate No |) . | <u> </u> | | L | 110 | - 2 | 10 | 3,0 | | 10 | 5,0 | 0 | | | L |
| | SANDY CLAY: silty, f | 2 1 21 125 | 813F 11F | Т | | | \perp | | | I | I | | | | | | -moist |
| | sand, dark brown (CI | r-OL) | | | | \square | | - | | 1 | | | | \bot | 4 | | 1110230 |
| 2 | | | | | | Н | + | 1. | H | + | + | H | | + | \dashv | | • |
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| 3 | | | | 1 | | Н | ╁ | +- | \vdash | + | +- | \vdash | | + | \dashv | | |
| 4 | DIL-SATURATED CLAY: | fine | | | | | 1 | | | 1 | | | | \perp | 1 | | -moist |
| | sand, silty, dark br | own to | | | | | \bot | | П | \Box | \perp | | | 1 | 7 | | mors c |
| - | black (OL) SANDY CLAY: silty, f | ine | | | | \vdash | + | +- | | + | +- | H | - | \dashv | \dashv | | |
| 6 | sand, reddish brown | (CL) | | \perp | | | | | | \perp | | | | | 1_ | | |
| 7 | TOTAL DEPTH 6.0' | · · · | | 1 | } | Н | | + | H | + | + | - | + | \dashv | - | | |
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| g .C. 4 | A.FORM - 18 | | | | | | | | | | | | | | RING | | o. <u>1A</u> o. <u>54</u> |

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| | OJECT CABOT, CABOT C.C.&F. WESTERN DEVE | | | IN | ic. | SI | JRF. | | | | ATIC | N | - | | DATE | 0F BORING 8-22-72 |
| L_ | SHELL CHEMICAL PL | | | | | | | 3 | 4. | 7 ' | | | 1 | COM | PLETE | 8-22-72 |
| TY | PE 8 DESIGNATION OF DRILL | SAMPLES | | | _ | H | MMA | ER | | | | | 1 | DEF | тнт | O WATER |
| | 24" Bucket Auger | No | ne | | | | | Ŋ | on | e | | | | | l | None |
| DEPTH FROM SURFACE | | | | RVAL | PENETRATION RESISTANCE | | | | | | | | | | T CF. | |
| S Su | CLASSIFICATION OF MA | TEDIA: C | SYMBOL | SAWPLE INTERVAL | RAT | | | | ٠ | | | ł | | | DRY UNIT WEIGHT-PCF. | |
| 1 T | (in feet) | I ERIALS. | × | 374 | NET | - | | MOI | STUR | | ONTE | I W | | | RY 16H | |
| 76.01 | | | 5 | SAN | PE RE | | | | 10 | | HAT. | ,0 LI | 6,0 | | O WE | |
| | LOCATION: Refer to | Plate No |) , | | | _ | | | | | | | | | | |
| | OIL-SATURATED CLAY: | | | | | | 1 | T | П | \Box | 1 | П | T | | | -moist |
| H | sand, silt, heavily saturated, odorous, | |] | | | H | + | +- | H | - | +- | + | +- | - | | |
| 2 | brown, organic (CL- | | | | | 口 | 1 | I | | | | | 1 | | | |
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| | SANDY CLAY: fine say | nd, |] | |] | \square | \Box | Ţ | | | | | I | | | |
| 1 | silty, reddish brown | u (CT) | | | | \vdash | + | +- | | | - | - | + | + | | |
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BORING NO. 1B PLATE NO. 55

| | LO | G OF | BO | DRIN | G | 1C | | | | | | SHEET 1 OF <u>1</u> | | | |
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| | OJECT CABOT, CABOT | | | INC. | SURI | | | |)N | STA | DATE RTED | OF BORING 8-22-72 | | | |
| <u></u> | SHELL CHEMICAL PL | ANT PROPI | | | | | 5.1 | , | | COM | PLETED | 8-22-72 | | | |
| TY | PE & DESIGNATION OF DRILL | SAMPLES | | | HAM | | _ | | | DE | | O WATER | | | |
| | 24" Bucket Auger | Noi | re | | | | None | <u> </u> | | | , | one | | | |
| DEPTH FROM SURFACE | CLASSIFICATION OF MA (in feet) | TERIALS | SYMBOL | SAWPLE INTERVAL PENETRATION RESISTANCE | • | L & | STURE | NAT. | | 1 | DRY UNIT WEIGHT- PCF. | | | | |
| | LOCATION: Refer to | Plate No | ٠. | | ····· | | | | | | · · · · · · · · · · · · · · · · · · · | | | | |
| \vdash | SANDY CLAY: fine say | | | | $\vdash \vdash \vdash$ | | $\vdash \vdash$ | | ╂-╂- | 11 | · · | | | | |
| 一 | silty, dark brown (| CL-OL) | | | \vdash | + | | | ++ | | 1 | | | | |
| 2 | · · · · · · · · · · · · · · · · · · · | | | | | 1 | | | | |] | -moist | | | |
| 3 | OIL-SATURATED CLAY: | | | 11 | | + | | | ┨ | ╂╌┼╼ | - | | | | |
| H | sand, silty, odorous brown to black (OL) | 5, | | | ┞╌┼╌┤ | + | - - | $\vdash \vdash$ | ++- | 11 | † | | | | |
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| | SANDY CLAY: silty, | fine | | | ┞┼┼╏ | + | - | | ++ | + - | 1 | -moist | | | |
| 6 | sand, reddish brown | (CL) | | | | 工 | | | | | 1 | | | | |
| 7 | TOTAL DEPTH 6.0 | • | ł | | | _ | \vdash | | | | - | | | | |
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| | OJECT CABOT, CABOT E | | | | | s | URI | AC | ΕĘ | LE | VA | T10 | N | | | | | F BORING |
| (| C.C.&F. WESTERN DEVEL SHELL CHEMICAL PLA | | | | C. | 1 | | | 35. | ۰٥١ | ì | | | | | | | 8-22-72 |
| ŢŢ | PE & DESIGNATION OF DRILL | SAMPLES | RII | | | H | ΔMI | ME | | | | | | | | | | 8-22-72 WATER |
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| | 24" Bucket Auger | Non | | | | | | 1 | lor | 1 e | | | | | <u> </u> | | NC | one |
| FACE | | | | M | S u | | | | | | | | | | | <u>, </u> | $\cdot T$ | |
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| DEPTH FROM SURFACE | CLASSIFICATION OF MA | TERIALS | SYMBOL | SAWPLE INTERVAL | PENETRATION RESISTANCE | | | | | | | | | | | DRY UNIT | | į |
| 11 | (in feet) | ·- • | λs | I da | ESI | Γ | | , A | OIST | URE | CON | TEN | T % | | | DRY HE | زُ | |
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| - | SANDY CLAY: silty, i | ine | | | | \vdash | - | + | + | +- | ╀ | - | | \dashv | | ł | ŀ | -dry to |
| - | sand, light to dark (CL) | prown | | | | \vdash | | 十 | + | +- | ╁ | - | | ┪ | | ł | - | moist |
| 2 | OIL-SATURATED CLAY: | silty. | 1 | | | | | 士 | 土 | | | | | | 丁 | 1 | | • |
| | fine sand, heavy oil | l satu- | | | 1 | L | | | | 1 | L | | \Box | \bot | | 1 | | |
| -5 | ration, odorous, broblack (OL) | own to | | | | - | \vdash | + | + | + | + | - | H | - | + | ۱ ۱ | • | • |
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| 5 | CANDY CLAY: | | | | | _ | | 4 | _ | 4- | \perp | 1 | \sqcup | _ | | 1 | - | |
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| - | SHELL CHEMICAL PLA PE 8 DESIGNATION OF DRILL | NT PROPE | RTY | | | ļ., | мм | | 3 . 2 | _ | | | | | | 8-22-72 WATER |
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| - | 24 Bucket Augel | 1401. | | _ | | _ | | 14.0 | 2116 | ; | | | | <u></u> | <u> </u> | one |
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| NOK. | CLASSIFICATION OF MA | TERIALS | SYMBOL | E | TRA | | | _ | | | | | _ | | P. F. | |
| PTK | (in feet) | | SΥ | AMPLI | ENE | | PL | MOI | STUR | _ | NAT. | _ | N. | | VE IS | |
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| - | LOCATION: Refer to SANDY CLAY: silty, f | | • | _ | | | _ | _ | 1 1 | _ | | | ŢŢ | | 1 | |
| | sand, light to dark | | | | | | | | | | 士 | 1 | | | | -moist |
| | (CL) OIL-SATURATED CLAY: | silty | | | | | + | +- | $\left \cdot \right $ | \dashv | | + | H | - | - | |
| ш | fine sand, heavily o | il | | | | | | 丰 | 口 | \exists | 士 | # | 口 | |] | |
| 3 | saturated, odorous, brown to black (OL) | dark | | | | \vdash | + | +- | H | - | \dashv | - | H | - | - | |
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| | SANDY CLAY: silty, f | | | | | | \pm | \perp | | | \pm | + | | | 1 | -moist |
| 7 | sand, reddish brown TOTAL DEPTH 7.0 | | | + | | | + | + | | - | + | + | | _ |] | - |
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BORING NO. 1E PLATE NO. 58

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| 1 ' | C.C.&F. WESTERN DEVE | | | | C. | | | | 35 | . 5 | • | | | 1 | ARTED APLETE | |
| TY | PE & DESIGNATION OF DRILL | SAMPLES | - | | | H.A | ММ | ER | | | | | | | | TO WATER |
| | 24" Bucket Auger | Nor | ie. | | | | | 1 | Noi | ne | | | | | · | None |
| DEPTH FROM SURFACE | | | ٥٢ | SAMPLE INTERVAL | PENETRATION RESISTANCE | _ | | | ــــــــــــــــــــــــــــــــــــــ | | | | | | DRY UNIT | |
| ROM J | CLASSIFICATION OF MA | TERIALS | SYMBOL | EIN | ETR. | L | | | 1 | _1_ | | | 1 | | DRY UNIT | |
| FPTN | (in feet) | | SΥ | AMPL | PEN | | | . | - | • | HAT. | HT 9 | LL | | PE N | |
| ٦ | LOCATION: Refer to | Plato Vo | <u> </u> | 10 | | | 110 | | ,0 | 3,0 | | 0 10 | 6,0 | <u> </u> | 1 | |
| | | · · · | <i>.</i> | _ | | 1 | -1 | 1 | 1 1 | | | 1 | гт | | 1 | <u> </u> |
| | SANDY/SILTY CLAY: (COL-SATURATED CLAY: | | | | | | + | + | H | + | + | + | H | + | 1 | -dry -moist |
| 2 | odorous, brown to bi | | | | | 口 | \bot | T | П | 1 | T | Ţ | | T | 1 | |
| - | (OL) | | | | | \vdash | + | + | H | + | + | +- | H | + | 1 | -moist |
| 3 | | | | | | | 1 | T | П | \Box | 1 | | | |] | |
| 4 | | | ļ | | | \vdash | + | ╁ | H | + | + | ╁ | H | | - | |
| | SILTY SAND: clayey, | | | | ı | | | | | 士 | 1 | 上 | 口 | 士 | 1 | |
| 5 | sand, greenish brown | (SM) | | | | \vdash | - | + | $\left\{ -\right\}$ | \dashv | + | + | \dashv | | -{ | -moist |
| 6 | | · | | | | | 1 | 1 | | 1 | 士 | | | | | |
| 7 | TOTAL DEPTH 6.0 | | | | | H | - | - | \vdash | + | - | - | | | - | |
| | | | | | | | \dagger | \perp | | \perp | \perp | 1 | H | 士 | 1 | |
| 8 | | | | | | | 1 | $oxed{\bot}$ | | \dashv | 1 | | | |] | |
| 히 | | | | | | \vdash | + | + | ╂┪ | + | ╁ | ╁ | H | + | - | |
| 10 | · | | | | | | 1 | I | П | \bot | \bot | I | | |] | |
| H | | | | | | H | + | ╁ | H | + | + | + | H | + | - | |
| 回 | • | | | | | H | | | 口 | \exists | | 工 | | | | |
| 12 | | 1 | | | | \vdash | + | +- | H | + | + | +- | \vdash | | - | |
| | | | | | | | 1 | | | 士 | 1 | 士 | \square | 土 | 1 | |
| 13 | | | | | | $\vdash \vdash$ | + | + | - | + | + | + | \vdash | + | 4 | |
| 14 | | | | | | 世 | 士 | | | 1 | 1 | 1 | \Box | | 1 | |
| 15 | | 1 | | | | | - | + | | 1 | | 1 | $ \cdot $ | - | - | |
| | | | | | | | _ | 1 | 1- | _ | _ | 1 | \Box | 士 | 1 | |
| 16 | | : | | | | П | | | П | \Box | T | I | П | 1 | 7 | |
| 17 | | | | | | - | + | + | ╁┤ | \dashv | + | + | + | + | 1 | |
| | | | | | | | 土 | I | | 1 | 1 | 1 | \square | |] | |
| 18 | | | | | | | + | + | $\left \cdot \right $ | + | + | + | $\left \cdot \right $ | + | - | |
| 19 | | | | | | | | | 口 | 士 | 士 | 上 | 廿 | 士 | 1 | |
| 120 | • | | | | | | \perp | + | | 1 | $-\!$ | 1 | \prod | | - | |
| 20 | A. FORM - 14 | | | لــــــــــــــــــــــــــــــــــــــ | | <u> </u> | | 1_ | <u> </u> | | | | لما | BOE | ING | NO1F |

PLATE NO.

| Г | LO | G OF | BO |) | RIN | G | | — I G | | | | | | | | SHEET |
|--------------------|---|-----------|--------|-----------------|---------------------------|---------------------|---------|--|-----------------|----------|---------|--------------------------|------------------------|---------|----------|--------------------|
| | OJECT CABOT, CABOT | FORBES | | | | | | | EL | EV | ATIC | N | | | | OF BORING |
| 1 | C.C.&F. WESTERN DEVEN SHELL CHEMICAL PLA | | | | | | | 3 | 5.8 | * | | | | | RTED | 8-22-72 B-22-72 |
| TY | PE & DESIGNATION OF DRILL | SAMPLES | | | | НА | MM | ER | | | | | | | | TO WATER |
| | 24" Bucket Auger | Nor | ne . | | | | | No | one | <u>:</u> | | | | | • | None |
| DEPTH FROM SURFACE | | | | FRVAL | PENETRATION RESISTANCE | | | | | | | 1 | | | PCF. | |
| T NOW S | CLASSIFICATION OF MA | TERIALS | SYMBOL | SAMPLE INTERVAL | STAN | | | , | 1 | | | | 1 | | DRY UNIT | |
| OE P T W | (in feet) | - English | SΥ | SAMPL | PEN | | | <u>. </u> | O | • | HAT. | NT % | LL B _f C |) | DR DR | |
| | LOCATION: Refer to | Plate No | 2. | | | | | | , | | | | | | | |
| | SANDY CLAY: silty, | ine | | Τ | | \prod | \perp | | | T | 1 | | 4 | 1 | 1 | -moist |
| | sand, light to dark (CL) | prown | | | | \vdash | ╁ | - | ╁┼ | + | +- | H | \dashv | + | ┪ | |
| 2 | (02) | |] | | | | 工 | | | | | | | |] | |
| 3 | | | | | | $\vdash \downarrow$ | | - | - - | + | - | \bot | 4 | - | 4 | |
| 14 | | | | | | | +- | +- | \vdash | + | + | ╀┤ | + | + | 1 | |
| 4 | | | | | | | | | | | 士 | | | |] | |
| 5 | | | | | | $\vdash \downarrow$ | | - | | + | + | - | \dashv | + | - | |
| | OIL-SATURATED CLAY: | silty, | | 1 | | H | + | \vdash | - | + | + | | + | +- | 1 | -wet |
| 6 | fine sand, extreme of | oil | | | | 口 | 1 | | | 1 | | | | |] | |
| 17 | saturation, odorous, (OL) | black " | | 1 | | $\vdash \vdash$ | + | - | \vdash | + | + | ╂╌╂ | + | +- | 4 | |
| | SANDY CLAY: silty, f | ine | | | | \vdash | +- | \dagger | - | + | 十 | + | \dashv | + | † | -moist |
| В | sand, reddish brown | (CL) | | \perp | | | | | П | I | I | | \Box | I | 1 | |
| 9 | TOTAL DEPTH 8.0 | · | | | | ├┼ | +- | \vdash | - | + | + | + | + | + | ┨ | |
| | | | ĺ | | | H | + | \vdash | | 十 | + | f | + | + | 1 | |
| 10 | | | į | | | | 1 | | | 1 | 工 | | \Box | \top |] | |
| | | | | | | ┝┼ | + | - | H | + | + | H | \dashv | + | 4 | |
| | | | | | | \vdash | + | \dagger | | 十 | + | \dagger | \dashv | + | _ | |
| 12 | | | İ | | | \Box | | | | I | | | \Box | \perp |] | |
| 13 | | | | | | ╟┼ | | ╀ | \vdash | + | + | H | \dashv | + | -{ | |
| | | | | | | | | | | 1 | 土 | | 士 | 上 | 1 | |
| 14 | | | | | | H | _[_ | - | \prod | \bot | \perp | \Box | \perp | | 4 | |
| 15 | | | | İ | | ╟┼ | + | + | ╁┼ | + | + | ╂╌┤ | + | + | 1 | - |
| | | | | | | | | | | | 士 | 廿 | 士 | | 1 | |
| 16 | | | | | | H | - | \perp | igspace | \perp | + | \Box | 4 | - | 4 | |
| 17 | | | | | | - | + | - | \vdash | + | + | H | _ | | _ | |
| | | | | 1 | | \Box | | | П | 1 | I | | \Box | I |] | - |
| 18 | | | | | | \vdash | + | - | $\vdash \vdash$ | + | +- | $\left\{ \cdot \right\}$ | + | + | -{ | |
| 19 | • | | | 1 | | $\vdash \vdash$ | + | | | 十 | + | $\dagger \dagger$ | 1 | _ | 1 | |
| | • | | | | | 口 | \bot | | | \perp | I | | I | |] | |
| 20 | A.FORM - 10 | | L | | | Ш | | | Ш | | | | | | IING | NO. 1G |

BORING NO. 1G PLATE NO. 60

| | 10 | G OF | RC | _) F | RIN | G | | | | | | | | | | | SHEET |
|--------------------|--|--|--------|-----------------|---------------------------|---------------------|---------|--|-----------------|----------------|---------|-----------|-----------------|--------------|----------|-------------------------|--------------------|
| | OJECT CABOT, CABOT | FORBES | | | | | | | EL | EV | ATIO | ON | | | _ | | OF |
| ' | C.C.&F. WESTERN DEVEL | 14 | | IN | c. | | | 36 | 5.2 | 1 | | | | 1 | | TED | 8-22-72 8-22-72 |
| TY | PE & DESIGNATION OF DRILL | SAMPLES | | | | НА | мм | ER | | | | | | | | | WATER |
| | 24" Bucket Auger | Nor | ie | | | | | No | one | : | | | | | | N | ione |
| DEPTH FROM SURFACE | CLASSIFICATION OF MA (in feet) | TERIALS | SYMBOL | SAWPLE INTERVAL | PENETRATION RESISTANCE | ~ | | <u>. </u> | TUR | -, | AŤ. | | LL | | | DRY UNIT WEIGHT-PCF. | |
| | LOCATION: Refer to | Plate No | | | | L | 110 | • | <u> </u> | 3.0 | | | | | | | |
| | SANDY CLAY: silty, | fine | | | | | I | | | I | I | I | | I | I | | |
| H | sand, light to dark | brown | | | | ┟┼ | + | + | \vdash | + | + | ╀╴ | $\vdash \vdash$ | + | \dashv | | -moist to |
| 2 | OIL-SATURATED CLAY: | silty, | | | | | 士 | | 廿 | 士 | 士 | | H | 1 | \vdash | | wet |
| | fine sand, heavily o | oil | | | | П | T | | | 1 | I | | П | \downarrow |] | | |
| 一当 | saturated, extremely odorous, dark brown | / +0 | | | | \vdash | + | | \vdash | ╬ | ╁ | ╁ | Н | \dashv | \dashv | . | • |
| 4 | 4 black (OL) 5 | | | | | | | | | | | | | | | | |
| - | 5 -moist | | | | | | | | | | | | | | | | |
| 13 | SANDY CLAY: silty, f | ine | | | | \vdash | + | +- | H | ╁ | ┿ | ╁╴ | H | + | ┨ | | -moist |
| 6 | sand, reddish brown | | | | | | | | | I | | 上 | | | コ | | |
| 17 | | | | | | $\vdash \vdash$ | + | \downarrow | - | 4 | + | ┼ | \sqcup | - | 4 | | |
| | TOTAL DEPTH 7.0 | , | | + | | - | + | +- | | ╁ | + | + | Н | \dashv | \dashv | | <u> </u> |
| 8 | | ************************************** | | | • | \Box | | | | 1 | | I | | \Box | \Box | | |
| 9 | | | | | | \vdash | + | + | $\vdash \vdash$ | + | ╀ | +- | H | + | \dashv | | _ |
| | | | | | | | 土 | | | | | 上 | | | | | |
| 10 | | | | | | \Box | \perp | | Н | Ţ | - | \perp | | 1 | \dashv | | |
| \mathbf{H} | | | | | | | + | +- | \vdash | + | 十 | 十 | \vdash | \dashv | \dashv | | |
| | | | | | | 口 | 工 | | 口 | 1 | 1 | I | | \exists | コ | | |
| 12 | | | | | | $\vdash \downarrow$ | + | +- | $\vdash \vdash$ | + | + | + | H | + | 4 | | |
| 13 | | ı | | | | | + | + | | + | + | \dagger | H | _ | \dashv | | |
| | | | | | | 口 | I | | | 1 | I | L | \Box | 1 | | | |
| 14 | | | | | | $\vdash \vdash$ | + | + | $\vdash \vdash$ | + | + | + | $\vdash \vdash$ | + | \dashv | • | |
| 15 | | | | | | Li | + | | | + | + | 1 | | _† | \dashv | | |
| | | | | | | П | T | $oxday{}$ | П | T | T | I | П | 耳 | 口 | | |
| 16 | | | | | | $\vdash \vdash$ | + | + | $\vdash \vdash$ | + | + | + | H | - | \dashv | | |
| 17 | | | | | | 广 | 土 | | | 士 | 士 | 上 | | | | | |
| | | ; | | | | | \bot | ļ_ | \Box | T | \perp | \perp | | \bot | _ | | |
| 18 | | | | | | $\vdash \vdash$ | + | +- | $\vdash \vdash$ | + | + | + | H | \dashv | \dashv | | } |
| 19 | ; | | | | | 口 | 土 | | | 1 | 土 | 工 | | | | | |
| | | | | | | H | \int | $oldsymbol{\perp}$ | \Box | \bot | \perp | <u> </u> | | 4 | | | |
| 201 | A.FOR#-16 | | | Ш | | Ш | | | LL | | | | <u> </u> | 80 | RI | NG N | 0. <u>l</u> H |
| | | , | | | | | | | | | | | | PL | | | 0. 61 |

| Г | | 0.05 | 5.6 | _ | | _ | • | _ | | | | | | | | SHEET | - 7 |
|--------------------|--|-------------|--------|----------------|---------------------------|-----------|----------|---|----------|--|-----------------|-------------|----------------|-------------------------|------|------------------|--------------|
| | | G OF | |) t | KIN | | | | | | | | | | | <u> </u> | |
| | OJECT CABOT, CABOT C.C.&F. WESTERN DEVE | | | IN | ic. | Su | RFA | | EL | _ | FION | ı | STA | DATE | | 3-22- | |
| | SHELL CHEMICAL PL | ANT PROPI | | | | | MM | | 5.3 | <u>.</u> | | | | PLETER | | 3-22- | |
| ' ' | 24" Bucket Auger | SAMPLES | one | | | [" | . NA IVI | | one | | | | ا | ז אזק י | vone | | |
| ਝ | 27 240,000 114902 | .,, | | L | 7 | - | | | | | | | | 1 | 1 | = | |
| SURFA | | | ٦, | ERVA | NCE | | _4_ | | <u>.</u> | ــــــــــــــــــــــــــــــــــــــ | | | | i S | | | İ |
| 30 | CLASSIFICATION OF MA (in feet) | TERIALS | SYMBOL | SAMPLE INTERVA | ETR/ | | | | L | | | | | DRY UNIT WEIGHT-PCF. | | | |
| DEPTH FROM SURFACE | (11. 1666) | | S | SAMP | PENETRATION RÉSISTANCE | | PL : | | O | COM → N4 310 | | Ti. | 10 | WEI | | | |
| | LOCATION: Refer to | Plate No | ٠. | | | | | | <u> </u> | -1- | | | · | | 1 | | , |
| | SANDY CLAY: silty, | | | | | П | T | | | I | | T | | | | <u> </u> | |
| | sand, light to dark (CL) | brown | | | | | \pm | | | - | | + | | 1 | | | |
| 2 | | | | | | H | + | \vdash | | + | H | - | $\vdash\vdash$ | - | | | |
| 3 | OIL-SATURATED CLAY: fine sand, extreme 1 | silty, | | | | | | | | 1 | | 1 | | 1 | | | |
| 4 | oil saturation, blace | | | | | | \pm | + | | + | | - | | 1 | | | |
| 5 | (OL) | | | | | H | - | | \dashv | - | | \bot | - | 1 | | | |
| 6 | | | | | | | 1 | | | 1 | | | | 1 | | | |
| | SILTY SAND: slight of | lay | | | | $oxed{H}$ | | | | | | | | 1 | | | |
| 7 | content, fine sand, odor, greenish brown | slight (SM) | | | | H | + | | | F | | + | H | - | | | |
| 8 | | | · | 1 | | 茸 | 1 | | | # | | # | 口 | <u> </u> | | , | |
| 9 | TOTAL DEPTH 8.0 | • | | | | | + | - | | 士 | | \pm | | 1 . | | | |
| 10 | | | | | | \Box | \bot | | 1 | - | \Box | - | | - | | | |
| | | 1 | | | | | 土 | | | 1 | | | · | 1 | | | i |
| | Zasadous Phalesials A | | | | | | + | | + | + | | - | | } | | | |
| 12 | Agus Mare | 3 | | | | \Box | - | | | \vdash | | - | - | - | | | |
| 13 | | \ | | | | | | \Box | | 上 | | | | 1 | | | |
| 14 | JAN 7 | 1982 | | | | | + | ╁┤ | | + | | +- | | 1 | | | |
| 15 | Colifornia D |] | | | | \Box | - | \perp | | 1 | | - | | } | | | |
| | of Health S | N | | | | 口 | # | | + | 上 | | | 口 | 1 | | | |
| 16 | LOS ANG | ELES | | | | | + | H | - | +- | $\vdash \vdash$ | +- | | } | | | |
| 17 | | | | | <u> </u> | H | | | | F | П | - | | - | | | |
| 18 | | | | | | 廿 | \pm | | | 士 | 廿 | 士 | | 1 | | | |
| 19 | | | | | | H | + | + | 4 | + | \prod | + | - | - | | | |
| | • | | | | | 口 | 1 | 口 | | # | | # | | 1 | | | |
| 20 | 4. FORM - 16 | | | Ш | | | 1 | لــــــــــــــــــــــــــــــــــــــ | | 1_ | | | BOR | ING N | 10. | 11 | |
| | | | | | | | | | | | | | PLA | | 10. | 62 | |

| (hole collapsed due to soft tar & oil) TOTAL DEPTH 13.0' 15 16 17 18 | | . LO | G OF | В |) F | RIN | G | 2 | Α | | | | , | | SHEET <u> </u> OF <u>l</u> |
|--|--------------------|-----------------------------------|--|------------|-----------------|---------------------------|-----------------|-----------|---------|--------------|------|--|-------------------|----------|-------------------------------|
| SHELL CHEMICAL PLANT PROPERTY TYPE A DESIGNATION OF BRILL SAMPLES CLASSIFICATION OF MATERIALS (in feet) CLASSIFICATION OF MATERIALS (in feet) LOCATION: Refer to Plate No. SANDY CLAY: dark brown (CL) CAL-SATURATED CLAY: extremely odorous, oil-saturated clay, silty, very little fine sand, black, viscous tar & oil (OL) (hole collapsed due to soft tar & oil) (hole collapsed due to soft tar & oil) (hole collapsed due to soft tar & oil) (hole collapsed due to soft tar & oil) (hole collapsed due to soft tar & oil) (hole collapsed due to soft tar & oil) (hole collapsed due to soft tar & oil) (hole collapsed due to soft tar & oil) (hole collapsed due to soft tar & oil) (hole collapsed due to soft tar & oil) (hole collapsed due to soft tar & oil) (hole collapsed due to soft tar & oil) (hole collapsed due to soft tar & oil) (hole collapsed due to soft tar & oil) (hole collapsed due to soft tar & oil) | | | | | | - | SU | RFAC | EΕ | LEV | ATIC | N | T | | |
| TYPE & DESIGNATION OF DRILL 24 Bucket Auger None HAMMER DEPTH TO WATER |] | | | | | ic. | | | 37. | . 9 ' | | | | | |
| CLASSIFICATION OF MATERIALS (in feet) CLOCATION: Refer to Plate No. SANDY CLAY: dark brown (CL) COLI-SATURATED CLAY: extremely odorous, oil- saturated clay, silty, very little fine sand, black, viscous tar & oil (OL) (hole collapsed due to soft tar & oil) TOTAL DEPTH 13.0' BB 19 20 10 10 10 10 10 10 10 10 10 10 10 10 10 | TY | PE B DESIGNATION OF DRILL | | | | | HAI | MME | R | | | | | | |
| LOCATION: Refer to Plate No. SANDY CLAY: dark brown (CL) OIL-SATURATED CLAY: extremely odorous, oil-saturated clay, silty, very little fine sand, black, viscous tar & oil (OL) OIL | | 241 Bucket Auger | No | ne | | | | | Nor | ie. | | | | | None |
| SANDY CLAY: dark brown (CL) OIL-SATURATED CLAY: extremely odorous, oil- saturated clay, silty, very little fine sand, black, viscous tar & oil (OL) Solution (OL) (hole collapsed due to soft tar & oil) (hole collapsed due to soft tar & oil) TOTAL DEPTH 13.0' BORING NO. 2A | DEPTH FROM SURFACE | CLASSIFICATION OF MA (in feet) | TERIALS | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | PL & | | | NAT. | # L I | | DRY UNIT | |
| OIL-SATURATED CLAY: extremely odorous, oil- saturated clay, silty, very little fine sand, | _ | | | 2. | | | | **** | | | | | | | |
| extremely odorous, oil- saturated clay, silty, very little fine sand, 3 black, viscous tar & oil (OL) Collapsed Collapsed collapsed collapsed io io io io io io io io io i | | | own (CL) | ! . | | , | \vdash | +-} | + | + | | - - | ++ | 4 | |
| saturated clay, silty, very little fine sand, black, viscous tar & oil (OL) Collapsed JAN 7 1982 JAN 7 1982 (hole collapsed due to soft tar & oil) TOTAL DEPTH 13.0' Boring No. 2A | | extremely odorous, | oil- | | | | | | | | | | | d . | -moist |
| Solitor of the collapsed due to Collapsed Collapsed due to | 2 | saturated clay, sil | ty, | | | | | \prod | \Box | | | \prod | \prod | 7 | |
| (hole collapsed due to soft tar & oil) TOTAL DEPTH 13.0' BB 19 200 | 3 | very little fine san | id, 🚟 | 1 | | | \vdash | ++ | - - | | - - | ╁┼ | ++ | - | |
| S Collapsed | | | | | | | | | | | | | | 1 | ' |
| Collapsed 7 8 9 10 11 12 (hole collapsed due to soft tar & oil) TOTAL DEPTH 13.0' 18 19 20 SORING NO. 2A | 4 | | * * * | ĺ | | | - | 1-1 | | | | - | ╂- | 4 | |
| 7 982 | 5 | | | | | | | + | 十 | \vdash | +- | | ++ | - | |
| 7 982 | | | | | | | | | | П | | | | 1 | |
| B JAN 7 1982 | ۳ | | | | | | | ++ | + | + | + | | ╁┼ | - | collapsed |
| 10 | 7 | | | | | | \vdash | ++ | - | | + | | ++ | 1 | |
| 10 | 100 | | - 20 | Λ | | | | \coprod | \prod | П | | П | \prod |] | |
| 10 | - | INN | 7 1982 | | | | ├┼ | ╂╌┼ | + | ┼┼ | | | ╂╌┼╌ | - | |
| (hole collapsed due to 13 soft tar & oil) TOTAL DEPTH 13.0' 16 17 18 19 20 BORING NO. 2A | 9 | | | // | | | 立 | | 土 | | | | |] | |
| (hole collapsed due to 13 soft tar & oil) TOTAL DEPTH 13.0' 16 17 18 19 20 BORING NO. 2A | 10 | \ \ | | Y | | | | \prod | | - | _ | | 1-1- | _ | |
| (hole collapsed due to soft tar & oil) TOTAL DEPTH 13.0' 15 16 17 18 19 20 BORING NO2A | - | | | | | | ┝╌├╴ | ╁┼ | + | ++ | + | | + | 1 | • |
| (hole collapsed due to soft tar & oil) TOTAL DEPTH 13.0' 16 17 18 19 20 BORING NO2A | 1 | | The state of the s | | | | | | | | | | | 1 | |
| (hole collapsed due to soft tar & oil) TOTAL DEPTH 13.0' 16 17 18 19 20 BORING NO2A | 12 | | | | | | | 1-1 | | | | ╀ | ++ | - | |
| TOTAL DEPTH 13.0' 15 16 17 18 19 20 BORING NO2A | | (hole collapsed due | to | | | | \vdash | ++ | + | 1-1 | + | - | ╁┼ | 1 | |
| 15 16 17 18 19 20 BORING NO. 2A | 13 | | | | | | | П | 工 | | | | П | 1 | |
| 15 16 17 18 19 20 BORING NO2A | 14 | TOTAL DEPTH 13.0 |) • | | | | | +- | + | ╂╌╂ | + | - | + | \dashv | |
| 16 17 18 19 20 80 44 7089-16 | | | | | | | | | | | 1 | | 廿 | j | ` |
| 17 18 19 20 BORING NO. <u>2A</u> | 15 | | | | | | | 1-1 | 4 | - | _ | | \bot | 7 | |
| 17 18 19 20 BORING NO. <u>2A</u> | 16 | | | | | | $\vdash \vdash$ | ╁┽ | + | ╁┼ | + | + | ++ | - | • |
| 18 19 20 BORING NO. <u>2A</u> | | | · | | | | | | | | 工 | 口 | 口 | 1 | |
| 19 20 BORING NO. 2A | 17 | | | | | | - | 1-1 | +- | 1-1 | - | - | ╂┼ | 4 | |
| 19 20 BORING NO. 2A | 18 | | | | | | + | 1-1 | +- | ++ | + | ++ | $\dagger \dagger$ | 7 | |
| 20 BORING NO. 2A | | | | | | | | | 工 | \Box | 二 | | П | 7 | · |
| 1.0. & A. FORM - 16 BORING NO. 2A | 19 | ers \$ | | | | | - - | | | ╁┼ | | | ╁-┼- | - | |
| 1.0. & A. FORM - 16 BORING NO. 2A | 20 | | | | | - | + | 1-1 | + | | + | + | ++ | 1 | |
| | E.O. 8 | A. FORM - 16 | | | ^ | | | | | | | | | | |

| | | | | | | · | | | | | | | | | | | 0 |
|--------------------|--|----------|--------|-----------------|---------------------------|----------|--------------|--------------|--------------------------|-----------|----------|---------|----------------|----------|-----------|-------------------------|----------------------|
| | ĻΟ | G OF | BO |) F | RIN | G | | 2 | B | | | | | | | | SHEET 1 OF 1 |
| | OJECT CABOT, CABOT | | | | | St | JRF | ACE | ΕL | ΕV | ATI | ON | | | | | OF BORING |
| | C.C.&F. WESTERN DEVEL SHELL CHEMICAL PLA | | | | ic. | | | 3 | 7. | 7 ' | | | | | | | 8-22-72 8-22-72 · |
| TY | PE & DESIGNATION OF DRILL | SAMPLES | | | | H | AMA | AER | | | | | | | | | WATER |
| | 24" Bucket Auger | Nor | ne | | | | | N | on | e | | | | | | 1 | None |
| DEPTH FROM SURFACE | | : | | ¥ M | PENETRATION RESISTANCE | | | | | | | | | | | C.F. | |
| 3 a | CLASSIFICATION OF MAT | TEDIAL S | SYMBOL | SAMPLE INTERVAL | RAT | | | | | | | | | ! | 1 | DRY UNIT WEIGHT-PCF. | |
| E | (in feet) | enings | 3 Y M | 100 | NET SIS | | | | STUR | | | | * | | + | RY EIGH | |
| 8 | | | | 5 | P.E. | L | | . . . | | | MAY. | | 1 L L | ,0 | | _ ≱ | |
| L | LOCATION: Refer to | | • | | | - | | | · | | | | | | | ··· | |
| | SANDY CLAY: fine sar light to dark brown | | | | | H | \dashv | + | H | \dashv | + | + | + | \vdash | 4 | | -moist |
| | argine to dark brown | | | | | 口 | \downarrow | # | | \perp | \pm | 士 | 土 | | 1 | | |
| 2 | | ! | | | | H | \dashv | + | H | \dashv | + | + | + | H | + | | |
| 3 | | ! | | | | 口 | | | \square | | \perp | 士 | \perp | 廿 | 1 | | |
| 4 | | | | | | H | - | + | + | \dashv | \dashv | + | + | ╀ | 4 | | |
| П | OIL-SATURATED CLAY: | silty, | | | | | | 士 | | 士 | \perp | \pm | | | | | |
| 5 | heavy oil/tar satura very odorous, dark h | tion, | | | | | | + | $\left\{ \cdot \right\}$ | - | - | + | + | | - | | |
| 6 | black (OL) | JOWN CO | | | | | \exists | | | 1 | 1 | 土 | | | \exists | | |
| - | refusal due to concr | o to | | | | \Box | \Box | | \square | \dashv | _ | T | \bot | | 7 | | |
| | slab fragment | - | | | | | 1 | 1 | | | \perp | 土 | | | 1 | | |
| 8 | TOTAL DEPTH 7.5' | | | T | | | - | + | | \dashv | + | + | \perp | \vdash | \dashv | | |
| 9 | | · | | | | | 1 | 土 | | | 1 | | \perp | | 1 | | |
| 10 | | | | | | | \dashv | | \square | - | 4 | + | - | | 4 | | |
| | | | | | | | \exists | | | | | 土 | | | 1 | | |
| | | | | | | \Box | \dashv | Ŧ | П | \Box | 1 | \perp | $oxed{\Gamma}$ | П | 7 | | |
| 12 | | | | | | \vdash | \dashv | + | H | + | + | + | ╁ | - | \dashv | | |
| | | | | | | | | \bot | | | | | L | |] | | |
| 13 | | | ii. | 1 | | \vdash | 十 | ╁ | H | \dashv | + | + | + | - | \dashv | | |
| 14 | | | | | | П | \dashv | - | \Box | 1 | 7 | 1 | L | | 7 | | ; |
| 15 | • | | | | | H | \dashv | + | H | + | \dashv | + | ╁ | \vdash | \dashv | | |
| | | | | | | | 1 | # | | \exists | # | # | | 口 | | | |
| 16 | | | | | | \vdash | \dashv | + | + | \dashv | \dashv | + | + | \vdash | \dashv | | |
| 17 | | | | | | | \perp | | | | 士 | 士 | \perp | | | | |
| 18 | | | | | | \vdash | + | | ╂╌ | \dashv | + | + | - | \vdash | 4 | | |
| | | | | | | | \perp | + | | | 士 | 士 | 上 | | 1 | | |
| 19 | ; | | • | | | | \perp | \perp | \Box | \dashv | \Box | T | | |] | • | |
| 20 | | | | | : | H | + | + | +- | + | \dashv | + | +- | \vdash | \dashv | | , |
| | A. FORM - 18 | | | | · | المساد | | | | | | | | <u> </u> | | NG N | o. 2B |

BORING NO. 2B PLATE NO. 64

| | LO | G OF | ВС |) F | RIN | G | 2 | 2 0 | ; | | | | | | | | SHEET |
|--------------------|---|----------|--------|---|---------------------------|--------|-------|-----|--------------|-------|-----|----|--------------|--------------|---------------------------------|---------------|------------------|
| | OJECT CABOT, CABOT (C.C.&F. WESTERN DEVEL SHELL CHEMICAL PLA | | ic. | SU | RFA | | EL | | TIO | N | | | ARTE | , | 0F BORING 8-22-72 8-22-72 | | |
| TY | PE & DESIGNATION OF DRILL | SAMPLES | | | | НА | ММ | ER | | | | | | | | | WATER |
| L | 24" Bucket Auger | Nor | 16 | | | | | No | ne | | | | | | | N | one |
| DEPTH FROM SURFACE | CLASSIFICATION OF MA (in feet) | TERIALS | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | PL . | | TURE | * N | IT. | - | | 0 | DRY UNIT | WEIGHT - PCF. | |
| | LOCATION: Refer to | Plate No |) | | | | | | | | | | | | | | |
| 1 | SANDY CLAY: silty, f sand, scattered pebl cobbles, dark brown | les to | | | | | | | | | | | | | | | -moist |
| 3 | | | | | | | | | | 士 | | | | \pm | 1 | | |
| 4 | | | | | | | + | | | + | - | | - | + | 1 | | |
| 5 | | | | | | | | | | + | | | - | 7 | } | | |
| 9 | | | | | | | - | | | Ŧ | | | 7 | - | 7 | | |
| 7 | | | | | | H | Ŧ | F | | Ŧ | | | 7 | - | - | | |
| 8 | • | | | | | \Box | 1 | | | 1 | | | _ | 1 | 1 | | |
| | OIL-SATURATED CLAY: oil & tar, organics, | | | | | | 1 | - | | 丰 | | | 7 | + | 1 | | -moist to wet |
| ٥ | odorous, soft, black | | | | | | 1. | | | + | | | \downarrow | 1 | | | |
| | • | | | | | | | | | 士 | | | \downarrow | \perp | 1 | | İ |
| = | | ļ | | 1 | | | \pm | | | 土 | | | 1 | \pm | } | | |
| 12. | | | | | | | + | | \mathbb{H} | - | | | + | + | - | | |
| 13 | | | | | | | 1 | | | 1 | | | 7 | + | 1 | | |
| 14 | | | | | | | 1 | | | 丰 | | | \downarrow | 1 | 1 | | |
| 15 | A | | | | | 1 | 1 | L | | 土 | | | _ | | 1 | | |
| 16 | | | | | | | 土 | | | \pm | | | 士 | \pm | 1 | | |
| 17 | | | | | | | | | + | + | - | | - | 1 | _ | | |
| 18 | | | | | | | - | | - | F | | | \dashv | \top | - | | |
| 19 | 2 | | | | | H | + | - | | + | | H | 7 | + | - | | |
| 20 | · | | | | | | 1 | | | # | | | 1 | \downarrow | 1 | | |
| _ | A. FORM - 18 | | | نــــــــــــــــــــــــــــــــــــــ | L | Щ | | | <u></u> _ | Щ. | 1 | Щ. | | BOF | ING | N(| o. <u>2C</u> |

PLATE NO. 65

| • | PROJECT 7298 | LOG | OF | ВС | DRIN | G | 2 (| | | | | | SHEET <u>2</u> OF <u>2</u> |
|--------------------|-----------------|------------------------------|--|--------|--|-----|-------------|----|----------------|-------------|---|-------------------------|----------------------------|
| DEPTH FROM SURFACE | | ATION OF MATER | RIALS | SYMBOL | SAMPLE INTERVAL PENETRATION RESISTANCE | | PLA- | | COMT ONAT. | | | DRY UNIT WEIGHT-PCF. | |
| 20 | OIL-TAR S | ATTIPATED • | * | | | 1 1 | | TT | 1 ; | 1 1 | 1 | | |
| 21 | (continue | | 21 - 1 _{0.0} | | | H | 11 | # | \prod | + | # | | -soft |
| 22 | | | · • | | | | | ++ | # | | # | | |
| 23 | hole coll | apsed @ 23.0' DEPTH 23.0' | · ··· | | | | # | # | # | | # | - | |
| 24 | | DEPTH 23.0 | | | | | | | # | | | | 1.000.00.00 |
| 25 | | | Control of the contro | | | 片 | | # | ++ | \parallel | | | |
| 26 | | | t stylering | | | | ## | # | | | # | | |
| 27 | | | | | | | | | ## | 1 | # | | |
| 28 | , | | | | | | | | 11 | - | # | | |
| 29 | | | | | | Ė | | | | + | | | |
| 30 | | | | | | | | 廿 | $\pm \pm$ | | | | · |
| 31 | | | | | | | | | | | | | |
| 32 | | | | | | | | | | + | | | |
| 33 | | | | | | | | | | ++ | | | |
| 34 | | | | | | | | | | | | | |
| 35 | | | | | | + | | | | | | | |
| 36 | | | | | | | | | | | | | |
| 37 | | | | | | | | | | | | | |
| 38 | | | | | | | | | | \prod | | | |
| 39 | | | | | | | | | H | \prod | | • | |
| 40 | | | | | | - | H | H | \prod | H | + | , | |
| 41 | | | | | | | | H | H | - | | | · |
| 42 | | | | | | 1 | H | H | | - | | ! | . |
| 43 | | | | | | + | | H | | - | | | |
| 44 | | ; | | | | 7 | 井 | H | | | | | |
| 45 | | | | | | + | # | - | | # | + | | |
| | A FCR#- 162 | | | | | | 1 | 1 | 1-!- | 1 | | <u></u> | |

| | LO | G OF | В |) F | RIN | G | 2 | D | | | | | | | | SHEET 1 OF 2 |
|--------------------|---|-------------|------------------|-----------------|---------------------------|----------|---|-------------|-------|---------------|----------|-------|-------------|----|--------------------------|-----------------|
| | OJECT CABOT, CABOT & C.C.&F. WESTERN DEVEL SHELL CHEMICAL PLA | OPMENT C | | | c. | SU | | | ELE | | ION | | _ | TA | DATE RTED PLETED | |
| TY | PE & DESIGNATION OF DRILL | SAMPLES | | | | HA | MME | R | | | | | | | | O WATER |
| | 24" Bucket Auger | Nor | e | انخوات | | | | No | ne | | | | L | | N | lone |
| DEPTH FROM SURFACE | CLASSIFICATION OF MA' (in feet) | · | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | - I - I - I - I - I - I - I - I - I - I | MOIS | | CONT | 7, | ● FF | | | DRY UNIT WEIGHT- PCF. | |
| | LOCATION: Refer to | * 12 | 1.11 1111413. | 7,5 | | · | | | | ,, | | | | | | |
| ļ | SANDY CLAY: silty, f sand, few pebbles, d brown (CL-OL) | ine ark | | | | | | | + | | + | + | | | | -moist |
| 2 | OIL-SATURATED CLAY: | ~:1 +·· | | | | | + | | 1 | | 4 | | | | | -moist |
| 3 | fine sand, scattered | | | | | 廿 | 士 | | 土 | | \perp | 土 | | | | |
| 4 | pebbles & cobbles to odorous, heavy oil s | 3", atu- | | | | \vdash | + | | + | ┦┪ | \dashv | + | \vdash | | | |
| <u> </u> | ration, dark brown to black (OL) | .0 | | | | H | | | + | | 7 | + | | | | |
| 6 | (00) | | | | | H | 1 | | 1 | | 1 | 1 | | | | |
| | • | | | | | 且 | | | | | 1 | 1 | | | | |
| 7 | • | | | | | \vdash | - | | | | \pm | \pm | | | | |
| 8 | | | | | | H | \mp | | 7 | | - | + | | | | |
| 9 | - | | | | | 口 | 丰 | | | | # | 1 | | | | |
| 20 | | : | | | | | 1 | | 1 | | \pm | 土 | | | | |
| 11 | | | | | | H | + | | - | H | + | +- | - | Н | | |
| 12 | | 1 | | | | H | 1 | | 1 | | 4 | + | | | | |
| 12 | i | | | | | | 1 | | 土 | | 士 | \pm | | | | |
| 13 | | | | | | \vdash | + | | | - | \dashv | ╁ | \vdash | | | |
| 14 | | | | | | H | Ŧ | | # | | | | | | | |
| 15 | | | | | | | 丰 | | | | # | 1 | | | | |
| 16 | | | | | | | 士 | | 1 | | 士 | 士 | | | | |
| 17 | | ` | | | | }- | + | | + | + | \bot | + | - | H | | |
| 18 | | | | | | П | 1 | | 1 | | 7 | Ŧ | | П | | |
| | | | | | | 耳 | 1 | | \pm | | 1 | # | | H | | |
| 19 | ÷ | | | | | H | 1 | | _ | | + | + | - | H | | |
| 20 | . A. FORM - 18 | | | Ш | <u> </u> | | I | | I | | I | I | | | NG N | 20 |

PLATE NO. _

| | PROJECT 7298 | LOG | OF | ВС | PIN | IG | | 2 [|) | | | | | | | | HEE OF | |
|--------------------|-----------------|-----------------------------|------------------------------|--------|--|------------------|--------------|------------------------|-----------------|--------------------|------------------------------|-----------------|-----------|----------|-------------------------|------|-----------|---|
| DEPTH FROM SURFACE | | ATION OF MATER (in feet) | RIALS | SYMBOL | SAMPLE INTERVAL PENETRATION RESISTANCE | | - I - PL 1,0 | ▲ | STURE | CO NA | ۲. | | L L | | DRY UNIT WEIGHT-PCF. | | | |
| 20 | • | | | | | | | | | | | | | | | | | |
| | OIL-SATUR | ATED CLAY: | -, | | | П | T | Ţ | П | T | | | 1 | T | | | | |
| 21 | (continued | i) /: silty, fine | <u> </u> | | | H | ╁ | ╁ | ╁┼ | + | - | H | ╫ | + | 1 | -moi | st | |
| 22 | sand, pebl | oles to 3/8", vn (CL) | | | | 耳 | 1 | | | 1 | | | | 丰 | | | | |
| 23 | light brow | m (CL) | | | | \mathbb{H} | + | ╀ | - | ┿ | - | H | + | + | - | | | |
| L | | | | | | 口 | 土 | | | | | | | 上 |] | | | |
| 24 | | | • | | | | + | - | $\vdash \vdash$ | - | | $\vdash \vdash$ | - - | + | 1 | t | | |
| 25 | | | | | | | 士 | | 世 | | | 廿 | 1 | 士 | <i></i> - | | | |
| 1 1 | | | | | | H | 1 | 1 | \prod | + | \vdash | H | $-\Gamma$ | + | } | | | |
| 26 | | | | | | | 士 | | | \pm | | | 士 | 士 |] | | | |
| 27 | | | | | | H | \bot | | \prod | \bot | \Box | \Box | _[_ | \perp | { | | | |
| 28 | | | | | | 廿 | | | | | | | \pm | 上 | | ŀ | • | |
| 29 | | | -2 | | | \prod | \mp | - | | 1 | | \Box | \perp | 1 | | | • | , |
| 1 1 | | | e det Tod Section | | | 廿 | | | | \pm | | | | \perp | j | } | | |
| 30 | mom> * | 22221 22 41 | shelled. | | | H | 4 | - | | + | | \Box | - | - | | | | |
| 31 | TOTAL | DEPTH 30.0' | - 1947 - 1841 1947 - 1841 | | | | \pm | | | 1 | | | | | | | | |
| 32 | | | - 11.5 - 11.5 - 11.5 | | | | \bot | | | $oldsymbol{\perp}$ | Н | | | L | | | | |
| 1 1 | | | : := | | | | \dagger | | | \perp | | | \perp | | | | | |
| 33 | • | | 1 ag 4460 2 ch | | | П | 1 | | | I | | | T | F | | | | |
| 34 | | | | | | | 士 | | | 1 | | | \pm | | | | | |
| 1 1 | | | | | | \Box | \bot | П | | F | | | 7 | \vdash | | | | |
| 35 | | | 14 | | | \vdash | + | H | | + | | | + | + | | | | |
| 36 | | | | | | \Box | Ţ | \square | 4 | T | | | Ţ | | | | | |
| 37 | | | | | | + | + | H | + | | \vdash | | + | - | | | | |
| | | | | | | | 1 | | 1 | | | | 1 | | | | | |
| 38 | | | | | | - - | + | H | + | + | H | \dashv | + | - | | j | • | |
| 39 | | | | | | | 1 | 口 | # | 1 | | | 工 | | | | | • |
| 40 | | | | | | \dashv | +- | ╂╌╂ | + | - | \vdash | | + | | | | | |
| | • | | | | | | 丰 | Ц | 1 | | | | 土 | | | 1 | | |
| 41 | | | | | | | + | H | + | | | + | + | + | | | | |
| 42 | | | | | | | | | 1 | | 口 | | 丰 | | : | | | |
| 43 | | | | | | | + | $\left \cdot \right $ | + | +- | $\left \cdot \cdot \right $ | + | + | \vdash | | 1 | • | |
| | | ; | | | | | 士 | | 土 | | | | 上 | | | | | |
| 44 | | | | | | - | + | H | - - | \dashv | \square | | + | - | | İ | | |
| 45 | ····· | | | | | 1 | | | 土 | | | | | | | | | |
| K . O-& / | A, FORM - 16A | | | | | | ***** | | | | | | В | OR | NG N | 0 | 2D | |

| | LO | G OF | ВС | DRIN | G | 21 | = | | | | | | SHEET |
|--------------------|---|--------------|--------|--|------|------|------|------------------------|-------|-----------------|-------------|-------------------------|------------------------------|
| _ (| OJECT CABOT, CABOT & C.C.&F. WESTERN DEVEL SHELL CHEMICAL PLA | OPMENT (| | | SURI | | ELE | | ION | | | RTED | OF BORING |
| TY | PE & DESIGNATION OF DRILL | SAMPLES | | | HAM | | | | | | DEI | | WATER |
| <u> </u> | 24" Bucket Auger | Nor | re | | | No | one | | | | <u> </u> | | lone |
| DEPTH FROM SURFACE | CLASSIFICATION OF MAT (in feet) | FERIALS -%-7 | SYMBOL | SANPLE INTERVAL PENETRATION RESISTANCE | } | W011 | TURE | HAT | ENT | % ■ LL 51 | | DRY UNIT WEIGHT-PCF. | |
| | LOCATION: Refer to | Plate No | | | | | | | | | | | . ! |
| 2 | SANDY CLAY: silty, f sand, angular pebble gravel to 1", light brown (CL) | s & · · | | | | | | | | | | | -moist |
| 3 | | | | | | | | | \pm | | + | 1 | |
| | SANDY CLAY: silty, f sand, color change t brown (CL) | ine o | | | | | | - | + | | | | -moist |
| \Box | SILTY SAND: clayey, medium sand, scatter clay inclusions, gre brown (SM) | ed hard | | | | | | | | | | | -moist |
| 9 | TOTAL DEPTH 10.0 | f | | | | | | | + | | | | |
| 12 | | | | | | | | | + | | | | |
| 14 15 | Harance 1 19 | | | | | | | | + | | + | | |
| 16 | MAL \$ 19 | 82 | | | | | | | | | | | |
| 19 | LOS ANG | ELES | | | | | | | | | | | |
| 20 | A. FORM - 16 | | | 11 | | | | | | | BOR PL A | | 0. <u>2E</u> 0. <u>67</u> |

| | | | 54. | | · | | | | | | | | | , | | | |
|--------------------|--|----------------|---------------------------------------|----------------|---|-----------------|---------|-------------|-----------------|-----------|---------------|--------------|---------|--------------|-----------|---------------|-----------------|
| | LO | G OF | BO |) F | RIN | G | | 2 F | = | | | | | | | | SHEET 1 OF 1 |
| 00 | OJECT CABOT, CABOT | FODBES | · · · · · · · · · · · · · · · · · · · | | | S. | IRF | ACE | E I | <u> </u> | /A T 1 | ON | | 1 | DA | TE | OF BORING |
| | C.C.&F. WESTERN DEVE | | .o., | IN | c. |] | ,,,,,, | | | | /A 1 1 | UN | | \$1 | ARTE | | |
| 737 | SHELL CHEMICAL PI | | ERT | Y | | <u> </u> | | | 9. | | | | | | | | 8-22-72 |
| . 4 | | SAMPLES Not | | | | H/ | MM | | one | _ | | | | DI | PTH | | WATER |
| | 24" Bucket Auger | 1/01 | , | | | | | 140 | 2116 | = | | | | | | | one |
| DEPTH FROM SURFACE | | | | 1VAL | PENETRATION RESISTANCE | | | | | | | | | | ,_ | P. | |
| 2 | 0. A001F18AT18H AC 114 | | SYMBOL | SAMPLE INTERVA | AATI | | | | Щ. | 1 | | | | ! | - IN | WEIGHT - PCF. | |
| F P0 | CLASSIFICATION OF MA (in feet) | IERIALS | | - | VETI | _ | | MOI | I LUB | ı, | ONT | I | | Ь | DR. | .H | • |
| 12 | | • | S | SAMP | PER | | PL | | | _ | MAT. | _ | ĩi. | .0 | ā | WE | |
| | LOCATION: Refer to | Plate No | | | | L | | | 1- | 1 | <u></u> | | = | 1- | | | |
| | SANDY CLAY: silty, | | | | , , , , , , , , , , , , , , , , , , , | | | Τ | | 1 | _1 | 7 | Τ | П |] | | |
| | medium sand, scatter | ed | | | | П | 1 | L | | | T | T | | П | 7 | | -dry to |
| 2 | gravel to 1-1/2", rebrown (CL) | eddish / | | | | \vdash | + | + | $\vdash \vdash$ | - | + | ╁ | + | H | - | | moist |
| | SANDY CLAY: silty, i | ine to | ļ | | | | 土 | | \Box | | 1 | | | | 1 | | -moist |
| 3 | medium sand, dark br | | | | | \vdash | + | + | \vdash | | _ | 1 | 1 | | 4 | | • |
| 4 | | | 1 | | | Н | + | ╁ | ╁┤ | + | + | + | 十 | | - | | • |
| | | | | | | | | | | | \perp | 丰 | I | |] | | |
| 5 | color change to brow | 777 | | | | \vdash | | + | H | \dashv | + | ╀ | ╀ | | - | | |
| 6 | color onange to brov | *** | | ŀ | | | \pm | | | | | \pm | | | 1 | | • |
| 7 | | | | | | П | _ | _ | | \dashv | | 1 | | \square | 4 | | |
| | • | | | | | \vdash | ╅ | \dagger | H | + | \dashv | + | + | H | 1 | | |
| 8 | | | | | | | 1 | | П | \Box | \Box | \downarrow | | |] | | -moist |
| 9 | SILTY SAND: clayey, sand, micaceous, lim | rine monite | | | | $\vdash \vdash$ | + | ╀ | $\vdash \mid$ | \dashv | + | ╀ | ╀ | | - | | |
| | stained, brown (SM) | | | | | | 土 | 土 | | | 士 | 士 | | | _ | | |
| 10 | momar promit to d | | | + | | | - | + | | - | _ | + | - | \vdash | - - | | |
| П | TOTAL DEPTH 10.0 | , . | | | | H | | +- | H | + | + | + | ╁ | | ┨ | | |
| | | | | | | 口 | 1 | 1 | 口 | 1 | \perp | I | | П | 7 | | |
| 12 | | | | | | | + | + | H | - | + | + | ╀ | - | - | | |
| 13 | | | | | | | 土 | | | | \perp | 士 | \perp | | | | |
| 14 | | | | | | H | 4 | + | \dashv | \dashv | $-\Gamma$ | \perp | \perp | \prod | - | | |
| | | | | | | H | + | + | H | + | + | + | + | H | \dashv | | |
| 15 | • | | | | | 口 | 1 | T | 口 | \exists | | I | L | П | \exists | | |
| 16 | ì | | | | | | + | + | ╂┤ | - | + | + | + | H | \dashv | | • |
| | | | | | | | \pm | | | \exists | \pm | 士 | | | _ | | |
| 17 | | | | | | | \prod | + | \square | \dashv | \mathcal{A} | \bot | 1 | | 4 | | |
| 18 | | | | | | ┝┤ | + | + | H | + | + | + | + | H | - | | • |
| | | | | | | | 1 | 丰 | | | # | \bot | | 口 | 7 | | |
| 19 | : | • | | | | H | + | + | $\vdash \mid$ | 4 | \dashv | + | + | - | - | | |
| 20 | | ! | | | | H | + | + | H | \dashv | + | + | | H | 7 | | |
| | A. FORM - 14 | | | | | | | | | | | | | B0 | RING | | 02F |

BORING NO. 2F PLATE NO. 68

| | . LO | G OF | ВА | C | KHO | DE | | 2(| Re | te | st |) | | | SHEET 1 OF 1 |
|--------------------|--|---------------|----------|-----------------|---------------------------|---------------------|--------|----------|---|---------|----------|-----------------------|------------|--------------------------|--------------------------|
| | C.C.&F. WESTERN DEVE | LOPMENT | co., | | ic. | ຮບ | RFA | CE. | ELI | EVA | TIO | N | — | RTED | OF BORING 8-28-72 |
| TŸ | SHELL CHEMICAL PL. PE & DESIGNATION OF DRILL | ANT PROPI | ERTY | | | НА | ш | - 0 | | | | | | PLETED | 8-28-72 O WATER |
| Ι΄΄ | 24" Backhoe Bucket | No | | | • | | mmi | | one | | | | " | | |
| | 24 Backhoe Bucket | 1401 | 1- | , | , | | | 140 | -ne | | | | L | | None |
| DEPTH FROM SURFACE | CLASSIFICATION OF MA | TEDIALE | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | | | L | | | | \ <u>.</u> | DRY UNIT WEIGHT- PCF. | |
| # F P | (in feet) | , ruinco | ∑ | 12 | NE T SIS | | | MOIS | TURE | | TEN | T % | | DRY FIGH | |
| 120 | | | S | SAK | P.E. | | PL · | | 0 | 9 H/ | ¥. | — G ELL 0 6 | .0 | _ × | |
| | LOCATION: Refer to | Plate No | . | | | , | | | | | , | | | | |
| | CLAYEY SAND/SANDY C | | | | • | - - | ╀ | \vdash | + | + | \vdash | | - | ┥ | |
| | heavily oil-saturate brown to black, very | | Į | | | | 1 | | | | | | | 1 | -moist |
| 2 | viscous, sticky, odd | | ĺ | | ĺ | \Box | T | | | \perp | | - | | 7 | |
| 3 | (SC-CL-OL) | | | | | $\vdash \vdash$ | ╁ | \vdash | - | ╂╌ | \vdash | | | - | • |
| | | | | 1 | | | | | | | | | | 1 | |
| 4 | | | | | | Щ | _ | _ | | | | | | 1 | • |
| 5 | - | | | İ | | ┝┼ | + | \vdash | \vdash | ╁ | \vdash | | | - 1 | hole caved to 15'x15' |
| | | | | | | | | | | | | | | 1 / | CO 13 X13 |
| 6 | | | | İ | İ | | 1 | | | 1 | | | |] | |
| 7 | | | | 1 | | \vdash | + | | \vdash | + | \vdash | | - | 1 | |
| | • . | | | 1 | | | I | | | | | | |] | |
| 8 | | | | | | - - | + | | | + | Н | | | ┨ | |
| 9 | | | | | | $\vdash \vdash$ | + | - | \vdash | 十 | H | - | | 1 | 1 |
| | | | | İ | | \Box | I | | | | | | |] | |
| 0 | | | | | İ | ┞┼ | + | | \vdash | + | \vdash | | - | -{ | |
| | | | İ | | | | \pm | | | | H | | | 1 | |
| | | | Ì | | | \Box | \bot | \Box | | \perp | | | 1 | 7 | |
| 12 | | | | | | - - | + | + | \vdash | + | \vdash | | - - | 4 | |
| 13 | | | | | [| | 士 | | 二 | 士 | | | 士 | 1 | |
| 14 | concrete, clay pipe | , wood, | 1 | | | $\vdash \downarrow$ | + | \vdash | $\vdash \vdash$ | + | H | - | | 4 | |
| | steel, etc. (old du concrete slab + 4'x: | 112) 51x6" | 1 | | | 一 | + | + | $\vdash \vdash$ | + | \vdash | | - | 1 | |
| 15 | | | <u> </u> | 1 | | | 工 | | 口 | I | | | | 1 | |
| 16 | TOTAL DEPTH 15.0 |) ' | | | | | + | - | - - | + | H | | - | -{ | |
| | | | | | | | + | | \vdash | + | H | | + | - | - |
| 17 | | | 1 | | | 口 | 1 | | 口 | I | | | 口 |] | |
| 18 | | | | | 1 | \vdash | + | - | - | + | dash | | - | 4 | |
| - | | | 1 | | | H | + | | \vdash | + | H | | -+- | 1 . | |
| 19 | 2 | | l | | | 口 | I | | | I | \Box | | |] | |
| 20 | · | | | | | - | + | H | $\vdash \downarrow$ | + | \vdash | - | - | -{ | |
| | | | | 1 | 1 | | | لبلا | ـــــــــــــــــــــــــــــــــــــــ | | 1 | | | | <u>.l</u> |

BORING NO. 2 (Retest)
PLATE NO. 69

| | LO | G OF | BA | .C | KH(|)F | | | | | | | | | | | EET |
|--------------------|---------------------------------|------------|-------------|----------------|---------------------------|-----------|---------|--------|--|----------------|--------|---------------------|---------------|----------|-------------------------|----------|------|
| PR | OJECT CABOT, CABOT | . 17 | | | | | ACE | | EVA | TIO | N | T | | DATE | OF BO | OF 1 | |
| ļ , | C.C.&F. WESTERN DEVE | LOPMENT | .o., | I | ic. | 1 | | | | | | | | | TED | | 5-72 |
| L | SHELL CHEMICAL PL | | ERTY | _ | | | | | | | | | | | | 8-2 | |
| TY | PE & DESIGNATION OF DRILL | SAMPLES | | | | H4 | MM | IER | | | | | - 10 | DEP | TH TO | WATE | R |
| | 24" Backhoe Bucket | Noi | ne | | , | | | No | one | : | | | | | | lone | |
| JRFACE | | | بر | FRVAL | TON | | | | | | 1 | | | | IT PCF. | | Ì |
| DEPTH FROM SURFACE | CLASSIFICATION OF MA' (in feet) | TERIALS | SYMBOL | SAMPLE INTERVA | PENETRATION RESISTANCE | | | | L | | | Į., | .1. | | DRY UNIT WEIGHT-PCF. | | , |
| DEPTH | (In leet) | | λs | SAMPL | PENI | | P L | | TURE | €0 ₩ 3,0 | ATEN | 7 % | L 8,0 | | DR WEI | | |
| | LOCATION: Refer to | Plate No | ٠. | | · | | | | | | | | | | | | |
| | 'OIL-SATURATED CLAY: | fine to | | Т | | \square | \perp | | | \perp | \Box | | | П | | | |
| | medium sand, silty, | | ł | 1 | [| | _ | 4 | | \bot | 1 | \sqcup | 4 | \sqcup | | | 1 |
| | oil saturation, orga | | | 1 | | | 4 | 4-4 | | 4- | 1 | \sqcup | | ┦ | | ĺ | |
| 2 | | lark | l | | | \vdash | + | | | + | + | \vdash | + | Н | | | ŀ |
| | brown (OL) | | | | ļ | | 4 | | | 4- | - | $\vdash \downarrow$ | - | ╁┤ | | • | |
| 3 | • | • | l | 1 | | - | - | 4- | | 4 | 4- | \vdash | + | + | | | |
| | | | 1 | 1 | | - | - | | \vdash | - | | \vdash | 4- | ₩ | | | į. |
| 4 | • | | | 1 | l | \vdash | - | | | ╇ | | | + | 1-1 | | | |
| ┞╌ | | | > | 1 | 1 | H | 4 | | ├┼ | | +- | \vdash | + | ╁╌┤ | | | |
| 5 | | | } | 1 | | H | + | | $\vdash \vdash$ | ╁ | +- | ╁ | ╌ | Н | | } | |
| = | CHEMICALLY-SATURATE |) <u> </u> | | | | H | ┰┼ | +- | ┝┼ | ┿ | +- | H | -†- | + | | | |
| H | CLAYEY/SILTY SAND: | ine to | | ١ | | \vdash | + | | ┝┼ | ╁ | + | ┞╾┼ | ╅ | \vdash | | | |
| 7 | medium sand, odorous | | | 1 | 1 | H | 1 | . | 1 | ╅ | +- | | | \vdash | |] | |
| Н | light greenish brown | 1 | 1 | l | l | H | 1 | +- | | 1 | + | | 7 | 1 | | | |
| 8 | (SC-SM-OL) | | } | 1 | 1 | | 1 | 1 | | 1 | 1 | \sqcap | 1 | | | } | • |
| | | | | 1 | ł | \Box | 7 | _ | | 7 | | | 7 | | | | |
| 9 | • • • | i Ne | ĺ | 1 | | П | \neg | | | 1 | 1 | П | \top | | | } | |
| | | | | 1 | | П | T | \top | | T | | | ${\mathbb T}$ | | | l | |
| 10 | | | | | <u> </u> | | | | | \perp | | | | | | | |
| | TOTAL DEPTH 10.0 | 7 | | | | | | | | | L | | | | | | |
| | | | | | | \square | _ | | | 1 | 1_ | Ш | | 1 | | 1 | |
| LI | | | | | 1 | | | 4 | $\vdash \downarrow$ | 4 | - | \sqcup | 4 | 1 | 1 | I | · |
| 12 | • | | | 1 | | | _ | 4- | 1 | 4 | 1 | \sqcup | 4 | 1- | | 1 | |
| 1 1 | | | 1 | - | 1 | | 4 | 4 | | + | + | Н | _ | +- | 1 | 1 | |
| 13 | | | l | | 1 | H | -+ | | | + | - | \vdash | | 4- | ł | | |
| اجرا | | | l | | | H | - | - | ╁ | + | +- | $\vdash \dashv$ | + | +- | 1 | | |
| 14 | | | 1 | | [| H | - | | - | + | +- | ╌┤ | + | +- | } | 1 | |
| 12 | • | | l | | | H | -+ | | | + | +- | $\vdash \vdash$ | + | +- | ł | | |
| 15 | | | 1 | | ł | H | -+ | -+- | ┢┼ | + | | ╌┤ | + | +- | 1 | 1 | |
| 16 | | | Ī | | | H | -+ | | | + | +- | $\vdash \vdash$ | -1- | + | ţ | 1 | |
| 屵읙 | | | | | | H | - | +- | | + | +- | 1-1 | - | T | 1 | | |
| 17 | | | | | | H | - | - - | - | + | +- | H | + | + | 1 | 1 | |
| ├∸┤ | | |] | 1 | Į . | H | - | + | 1 | + | + | 1 | + | 1 | 1 | \ | . • |
| 18 | | | 1 | | | | + | + | | + | + | 1 1 | 十 | ╅ | 1 | 1 | |
| ⊬∺ | | | | | 1 | H | 十 | -†- | 11 | + | +- | 1-1 | + | 1 | 1 | 1 | |
| 19 | | | ļ | | 1 | \sqcap | 1 | 1 | \sqcap | 十 | 1 | \sqcap | 1 | 1 | 1 | 1 | |
| | | | | | | П | 7 | 1 | \sqcap | \top | \top | \sqcap | 1 | T | 1 | | |
| 20 | • | | | | | H | 7 | + | T^{\dagger} | 十 | 十 | 11 | 1 | 1 | 1 | | _ |
| .0. | A.FDRM - 10 | | | | | لبحر | | | ــــــــــــــــــــــــــــــــــــــ | | | | | 000 | ING N | 10 | 23 |

PLATE NO.

| | LO. | G OF | BA | /C | KHO | DE | . 2 | 24 | | · · · · · · | | | | | | SHEET 1 OF 1 |
|--------------------|-----------------------------------|----------|--------|--------------------|---------------------------|----------|----------------|-----------|----------|-------------|--------------|--------------------|----------|-----------|-------------------------|--------------------|
| | OJECT CABOT, CABOT | | | St | RF | ACE | EL | ΕVΑ | TIO | N | T | | | OF BORING | | |
| ļ | C.C.&F. WESTERN DEVE | | | | ic. | | | • | | | | | | | RTED | 3-25-72 8-25-72 |
| ΤY | PE & DESIGNATION OF DRILL | SAMPLES | 24/1 2 | - | | н | MM | IER | | | | | | | | WATER |
| | 24" Backhoe Bucket | Noi | ne | | | | | N | one | . | | | | | ì | None |
| DEPTH FROM SURFACE | CLASSIFICATION OF MA (in feet) | TERIALS | SYMBOL | SAUPLE INTERVAL | PENETRATION RESISTANCE | | | MOI: | | - H | AT. | -6 | LL | | DRY UNIT WEIGHT-PCF. | |
| | LOCATION: Refer to | | ٠. | | | | | | | | | | | | | |
| | SILTY SAND: fine to | medium, | | | | | \perp | 1 | П | 1. | $oxed{\Box}$ | | T | | | |
| <u> </u> | tan (SM) SANDY CLAY: slightly | v odor-/ | | | | \vdash | + | ╁ | H | ╁ | +- | H | | ╀┤ | | -moist |
| 2 | lous, dark brown (CL- | -OL) | | | | | 工 | | | | | | | | | |
| 3 | SANDY CLAY: fine san | nd, | | | | \vdash | + | \bot | | + | + | Н | - - | + | | |
| | brown (CL) | Ŧ | | | | | + | + | | + | + | H | 十 | H | | |
| 4 | | | | | | | | | | | | | 工 | | | |
| 5 | | | | | | \vdash | + | +- | \vdash | 4 | + | \vdash | | + | • | |
| J | CLAYEY/SILTY SAND: | fine to | | | | H | + | +- | H | + | 十 | H | 十 | + | | -moist |
| 6 | medium, brown (SC-S) | | | | | | | | | | | | | | | · |
| 7 | | | | 1 | ł | \vdash | 4 | + | - | + | \bot | Н | - - | + | | |
| | • . | | | | | H | + | + | H | + | +- | Н | + | + | | |
| 8 | | | | | | | 1 | | | 工 | | | | | | |
| 9 | TOTAL DEPTH 8.0 | | | | | H | + | +- | ╀ | + | | \vdash | + | \vdash | | |
| | | | | | | | + | + | - | + | +- | H | + | Н | | |
| 10 | | | | | , | | | | | | | | 1 | | | |
| 11 | | | | | | Н | + | +- | \vdash | + | +- | \vdash | - - | | | |
| | | * - | | | | H | + | +- | H | + | +- | H | ╁ | + | | |
| 12 | | | | | | | I | | | | | | I | | | · |
| 13 | | | | | | \vdash | - | - | | + | + | $\vdash \vdash$ | - | - | | |
| | | | | | | H | 十 | 十 | | + | + | H | + | + | | |
| 14 | | | | | | | I | Ţ | П | \perp | | | \bot | | | : |
| 15 | | | | | | \vdash | | ╀ | \vdash | - - | + | Н | \dashv | +- | | |
| | | | | | | | \dashv | \dagger | \vdash | + | 十 | Н | 十 | + | | · |
| 16 | | | | | | | \blacksquare | \bot | П | I | | | \Box | \Box | | |
| 17 | | | | | | \vdash | + | | \vdash | + | + | $\vdash \vdash$ | - - | \vdash | | |
| | | | | | | | + | + | | + | \dagger | H | _ - | | | |
| 18 | | | | | | | \perp | | П | 1 | | | 工 | | | |
| 19 | | | | | | ├┼ | + | +- | H | + | + | $\left - \right $ | | +- | | |
| | : | | | | | H | + | 1 | | + | 1 | H | _ - | + | | |
| 20 | A FORM - 16 | | | $oldsymbol{\perp}$ | | | \perp | \perp | | \perp | Ι | | | | <u> </u> | <u> </u> |

PLATE NO.

| | | | | | | | | | | | | | _ | | | | SHEE | 7 |
|--------------------|--|---------------|-------------|----------------|---------------------------|-------------|---------------|----------|-----------------|----------|----------|--------------|-----------|-------|-------------------------|---------------|-------|-----------|
| | | G OF | | ١C | KH | O | E | 2 | 5 | | | | | | | | 1 OF | |
| | OJECT CABOT, CABOT C.C.&F. WESTERN DEVE | | | T | IC. | Sı | RF | CE | EL | EVA | TIC | N | \exists | 374 | DATE | | BORIN | 6 5-72 |
| | SHELL CHEMICAL PL | ANT PROP | | | | | | | | | · | | | COM | PLETE | ь | 8-25 | 5-72 |
| | PE & DESIGNATION OF DRILL 24" Backhoe Bucket | SAMPLES No | ne | | |) H | MM | | one | <u>a</u> | | | | DE | PTH N | io wa Ione | | |
| <u></u> | | | | | z | ŀ | | | | | | | | | | | | · |
| SUR | | | 0 6 | TERV | ATIO | <u> </u> _ | | | | | | ı | <u>.</u> | | F 2 | | | |
| DEPTH FROM SURFACE | CLASSIFICATION OF MA' (in feet) | TERIALS | SYMBOL | SAMPLE INTERVA | PENETRATION RESISTANCE | | <u></u> | 100 | TURE | <u> </u> | | ! | | | DRY UNIT WEIGHT-PCF. | | | • |
| 86.3 | | | S | SAMP | PEN | | P L 110 | _ | 10 | - N | NT. | 3 L | L 6,0 | | ¥E OF | 1. | | |
| | LOCATION: Refer to | Plate No | ٥. | | | | | | | | | | | | | | | |
| - | CLAYEY/SILTY SAND: chemical odor, light | slight | | | | П | Ŧ | F | H | Ŧ | | П | Ŧ | F | } | -mc | pist | |
| | dark brown (SC-SM) | ן נט | | | | 口 | # | # | | 1 | | | # | # | | | | |
| 2 | , | | | | | | $\frac{1}{1}$ | +- | | \pm | | | \pm | 士 | } | | | |
| 3 | | | | | | П | - | F | | T | | \Box | 7 | Ŧ | - | | | |
| 4 | | | | | | | # | | | 1 | L | | 1 | 丰 | 1 | | | |
| 5 | | | | | | \boxminus | \pm | 1- | 廿 | \pm | | | \pm | \pm | | | • | |
| 6 | | | | | | | + | + | H | + | \vdash | - | + | + | 1 | | | |
| 7 | TOTAL DEPTH 6.0 | | | | | | 1 | 1 | | 1 | F | | # | 1 | | | | |
| | .* | | | | | | 士 | | | 土 | | | 1 | 士 | | | | |
| 8 | | | | 1, | | \vdash | + | +- | \vdash | ╁ | \vdash | | + | + | } | | | |
| 9 | | | ı | П | | \Box | 7 | F | | \bot | F | | \mp | Ŧ |] | | | • |
| 10 | | | | | | | 丰 | | | # | | | # | # | 1 | | | |
| 回 | · | | | | | | 士 | \pm | | \pm | | | \pm | \pm | 1 | | | |
| 12 | | | | | | H | + | - | \mathbb{H} | + | - | H | + | Ŧ | | | | |
| 13 | | į | | | | H | 1 | 1 | | # | | H | # | # | 1 | | | |
| | | | | | | | 士 | 1 | 廿 | 土 | t | | # | 1 | 1 | | | |
| 14 | | | | | | \vdash | + | + | $\vdash \vdash$ | + | - | H | + | + | 1 | | | |
| 15 | | | | | | \Box | 7 | | H | 1 | | | # | Ţ | 1 | | | |
| 16 | | | | | | | # | 1 | | 士 | | 廿 | # | \pm | 1 | | | |
| 17 | • | | | | | H | + | + | | + | - | | + | + | } | | | |
| 18 | | | | | | | 1 | - | H | - | - | H | Ŧ | Ŧ |] | | | |
| | | | | | | | # | | | # | | | # | # | 1 | | | |
| 19 | | | | | | H | + | + | - | + | | H | + | + | 1 | | | |
| 20 | A. FORM - 18 | | | П | | | 1 | | | I | L | | Į | I | ING | | 2.5 | |

BORING NO. 25 PLATE NO. 72

| | . LO | G OF | BA | 4 C | KH | O£ | = ; | 26 | ; | | | | | | | | SHEET 1 OF 1 |
|--------------------|--|---|-------------|-----------------|---------------------------|----------|-----------|--|------------------------|----------|----------|----|-------------------|-------------|-----------|-------------------------|--------------------|
| | | | | | | | | | | | | | | | | | |
| i | | | | | iC. | <u> </u> | | | | | | | | _ | | | 8-25-72 8-25-72 |
| TY | | | | | | н | MMA | ER | | | | | | D | EPI | H TO | |
| | 24" Backhoe Bucket | Мог | ne | | | | | N | ימכ | e | | | | 1 | | 1 | lone |
| DEPTH FROM SURFACE | CLASSIFICATION OF MA (in feet) | TERIALS | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | | NO1 | _ | • | NAT. | _ | 1 L L | | | DRY UNIT WEIGHT-PCF. | |
| | LOCATION: Refer to | Plate No |) | | _ | | | | | | | | | | | | |
| | ASPHALT CONCRETE: de | | | | | | \supset | oxdapprox | П | | \Box | Ţ | | \Box | I | | -moist |
| - | SANDY CLAY: fine to sand, dark brown (C) | | | | | H | + | +- | Н | ┥ | + | ╁ | H | \dashv | \dashv | | |
| 2 | (34.14) 442.1 220 (3. | | | | | | 土 | 上 | | 士 | | 上 | | | 1 | • | |
| 3 | A | | | 1 | | | - | 1 | | _ | 4 | 4 | \Box | | 4 | | |
| 3 | 7 | |] | | | H | + | +- | H | - | + | ╁ | + | + | - | | • |
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| | OJECT CABOT, CABOT C.C.&F. WESTERN DEVE | | | Iì | NC. | St | IRF. | ACE | ΕL | EV | ATIC | N | - | | DATE | OF BORING 8-25-72 |
| | SHELL CHEMICAL PL | | | | | | | | | | | | | | PLETED | 8-25-72 |
| TY | PE & DESIGNATION OF DRILL | SAMPLES | | | | HA | MM | ER | | | | | П | DEF | TH T | O WATER |
| <u> </u> | 24" Backhoe Bucket | No | ne | | | | | N | one | e | | | | | . 1 | None |
| DEPTH FROM SURFACE | CLASSIFICATION OF MA (in feet) | TERIALS | SYMBOL | SAMPLE INTERVAL | PENETRATION RESISTANCE | | P& | | TUR 10 | _ | ONTE | I % 17 % 10 L | 1 L 5,0 | | DRY UNIT WEIGHT-PCF. | |
| | LOCATION: Refer to | | ٥. | | | | | | | | | | | | | |
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| | sand, tan (SM) SANDY CLAY: fine to | | | | | \vdash | + | - | \vdash | + | + | ╂╌┼ | + | | | |
| 2 | sand, slightly organ | | | | | \vdash | + | +- | \vdash | + | + | + | + | + | | |
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5 8 15 SLEV 36.7 E115 / 30 3 !:SC CLAYEY SAND, variable quantities of SAMPY GUAL REPORT _ SM organic marter 0L (14) 155 SANCE THE CAMBUSCULES AND (9) (13) SILTY SAND / CLAYEY SAND SAND / CLAYEY SAND/ SILTY SAND ofermine to bullet intermittent dones, stigntly gaseous ador 28 🗓 SM (10) 127 031 07 042 SC zı 🚆 SW (47) 121 (20) (121 SW SANDY/SILTY CLAY (;2) .331 CL ML : <u>.</u> 5M SM (13) 3191 SAND/ SILTY SAND adorous آ... ۱ .153 117 :6; ± S₩ . ()5 SM . 1318 113 (8) SANDY SILF / SILTY CLAY adorous ML 277 ICL ! SHELL FRAGMENTS tine sity, sondy matrix (21) 36 SAND / SILTY SAND slightly pagrous SHELL FRAGMENTS- dense colcareous 1 sandy shell bed, well demented HEFUSAL 📮 SHELL FRANKINGS with fire sind, sid. _ SM and digy, goor to well remembed at 45 C) (15) (13) (00 CL 1 3ANCY/S.LT / CLAY- snell fragments ML LEGEND TLAT 110 195 BORING NUMBER TOTAL DEPTH 50 0 .2 D --- SPT - STANDARD PENETRATION TEST Standars Penetration Test is the number of blaws required to trive a £50 inch £0. Self Sagon Sampler High with a 140 gound hammer failing 30 inches --- -- -- AAG SAMPLE smull disturbed sample for moisture and classification (17)1 102 UNDISTURBED SPLIT SPCON SAMPLE MOISTURE CONTENT -2 43 inch I D. with Linch rings and/or 5 or 6 inch steeres, utilizing a 4,000 pound Kelly as a CABOT, CABOT & FORBES reaction C.C.B.F. WESTERN DEVELOPMENT CO., INC. TYPICAL UNIFIED SOIL CLASSIFICATION SYMBOL Las /cu FT SUBSURFACE SOIL CONDITIONS SHELL CHEMICAL PLANT PROPERTY Los Angeles, California CRED 01 R 1 F 2616 9-26-22 KEN OBRIEN & ASSOCIATES CONSULTING ENGINEEIRS

